

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

**MEMORANDUM**

**December 31, 2012**

**TO:** Phillip Fielder, P.E., Permits and Engineering Group Manager

**THROUGH:** Kendal Stegmann, Sr. Environmental Mgr., Compliance & Enforcement

**THROUGH:** Phil Martin, P.E., Existing Source Permits Section Manager

**THROUGH:** Peer Review, David Pollard, DEQ Regional Office at Tulsa (ROAT)

**FROM:** Herb Neumann, DEQ ROAT

**SUBJECT:** Evaluation of Permit Application No. **98-171-TV (M-5)**  
NORIT Americas, Inc.  
Pryor Activated Carbon Plant (SIC 2819)  
SW/4 SE/4 Sec. 4, T20N, R19E, Mayes County  
Parking lot entrance at 36.23802° N, 95.28675° W

Driving: From intersection of US 412 and US 69, six miles north to US 69A, three miles east to US 412B (Hunt Street), one mile south to 6<sup>th</sup> Street, almost ½ mile west, plant on left. Alternatively, from US 412 and US 69, three miles east to US 412B (becomes Hunt), almost five miles north to 6<sup>th</sup> Street, same as above.

**SECTION I. INTRODUCTION**

NORIT Americas owns and operates a virgin activated carbon or VAC (original straight run and acid washed carbon) manufacturing plant and a spent activated carbon (SAC) regeneration facility at its Pryor, Oklahoma facility. The facility was originally constructed in 1979 as authorized by Permit No. 78-002-C, and is currently operating under Title V operating permit 98-171-TV (M-4), issued August 9, 2011. A complete listing of all previous permits is available in tabular format in Section I of the initial TV permit. This application includes a new Insignificant Activity, but the principle purpose of the request is to address five issues in the existing permit, as follow.

1. **Activator startup conditions.** The existing permit requires that afterburner temperature at the activators be maintained at 1,650°F, one-hour average. During steady-state operations, enough combustible offgas and carbon monoxide are available for the temperature to be met as a self-sustaining condition. The natural gas (NG) feed acts only as a pilot light during normal operations. However, at startup, very little offgas is generated, and even less CO is available. Thus, supplemental fuel, in the form of NG, is required to maintain the desired temperature. Applicant feels that this is wasteful and may actually create more emissions than if the supplemental gas were not provided. The nature of the emissions would be different, in that combusting a stream consisting largely of NG would give rise to NO<sub>x</sub> emissions, while not

supplementing would allow the emission of VOC and CO. Applicant proposes that only enough NG to bring the afterburner temperature to 850°F and maintain it there for eight hours be required, after which the steady-state operation would maintain the temperature at or above 1,650°F. Their supporting arguments follow.

a) The first argument describes the startup process. The furnace is heated using NG, and steam is introduced into the lower hearths. At this point, the only emissions are steam and those related to gas combustion. Feed enters at an average rate of 55 lbs/min. The feed contains approximately 14% material that may be volatilized. With feed on only the first two hearths, emissions are steam, products of NG combustion, some volatilized material, and possibly some products of combustion of the volatilized material. By the time feed reaches the third and fourth hearths, volatilization is complete, in the sense that although more volatilization may occur later, conditions are sufficient at this stage to allow all volatiles to evolve from the feed. The carbon/steam reaction necessary to “activate” the carbon commences in this region of the furnace. There is insufficient oxygen in the furnace to combust the volatiles or the CO, and there is insufficient BTU content in the afterburner to combust all of the material. With feed on hearths three and four, emissions consist of steam, CO, VOC, and products of combustion of NG, CO, and VOC. By the time feed reaches hearth five and beyond, the BTU content of the exhaust has increased to the point of sufficiency to achieve combustion in the afterburner. Emissions are now entirely products of combustion, with the input of NG minimized to maintaining a pilot flame.

b) The second argument reviews a monitored startup from October, 2011. The afterburner temperature and exhaust concentration of CO (ppm) were observed for a period of three hours. The afterburner temperature climbed fairly uniformly from slightly less than 900°F at the onset of feed to about 1,100°F after about 101 minutes. It increased rapidly to about 1,350°F over a period of 7 minutes, and then increased uniformly to 1,650°F over the next 21 minutes. In the meantime, CO emissions remained at or below roughly 40 ppm for the first 65 minutes of feed, spiking rapidly at that time above 700 ppm, and reaching a high of 1,160 ppm before rapidly dropping below 50 ppm after 101 minutes. The coincidence in times for the rapid drop in CO ppm and the rapid increase in temperature suggest that the self-sustaining point had been reached at that time in the afterburner, at least with respect to CO.

After further meetings between applicant and DEQ, careful modeling by applicant produced curves demonstrating an uncontrolled emission profile for VOC. The curve is a function of material feed rate, amount of the feed that can be volatilized, and time. Assuming steady state flow to the furnace, this equation is

$$\text{VOC rate} = 0.95 \times \text{VOCFEED} \times [t \div (t + 14.2)], \text{ where}$$

VOC rate = lbs/minute of VOC emissions,

VOCFEED = raw material feed rate (lbs/min)  $\times$  (volatile matter content), and

t = time (minutes).

Total emissions for any startup event require integrating this expression between boundary conditions  $t = 0$  and the value of t when a temperature of 1,650° is achieved. The expression to be evaluated then becomes

$$\text{VOC} = 0.95 \times \text{VOCFEED} \times [t - 14.2 \times \ln(t + 14.2)]_0^t, \text{ where}$$

VOC = total event VOC emissions (lbs),

VOCFEED = raw material feed rate (lbs/min)  $\times$  (volatile matter content), and

t = time (minutes).

Because applicant has requested a three-hour (180 minutes) window for startup, a worst case evaluation of the preceding expression, using conservatively high rates of 80 lbs/min feed rate and 18% volatile matter content yields total VOC emissions of 1,954 lbs. Note that this extreme case assumes no combustion of VOC for the entire 180-minute interval. A more realistic example would use 60 lbs/minute at 16% concentration, and would achieve design temperature in 90 minutes, yielding 563 lbs of VOC. Note that three highly conservative assumptions have been made in this analysis and are embedded in the calculations shown. First is that no combustion of organic material occurs before the afterburners, regardless of conditions conducive to combustion in the hearths, ductwork and cyclones, such as elevated temperature, presence of oxygen, long residence time, and CO generation. Second is that most organics have auto-ignition temperatures below 1,400°F, well below the design afterburner temperature of 1,650°F. The third assumption is implicit in the extreme example calculations. Because high feed rate and high volatile content suggest maximized release of fuel, both in quantity and in time, the critical concentration required for self-sustaining combustion will be reached very early. That is, feed rate and concentration are in inverse proportion to time. Thus, the conditions posited in the extreme example are very unlikely, if not impossible. Applicant will use the calculation method described earlier to assign emissions to each startup event. Values of  $t$  will be set at zero for feed initiation and at whatever time the design temperature of 1,650° is achieved. In those cases where volatile content may be unknown, the historical average of 16% will be used.

The model for CO is similar to VOC, but much simpler. This model is based on testing performed in 2011, during which there was no CO generated in the first hour. After 60 minutes, CO was generated quickly, increasing in 27 minutes to 1,200 ppm, or 44.5 ppm/minute. Following the 87<sup>th</sup> minute, concentration remained at 1,200 ppm until temperature reached a critical point at which CO was oxidized, dropping the concentration to a negligible level. Calculating emissions of CO involves a primary conservatively high assumption that the exhausts are at design flow rate, or 29,983 scfm. Thus, total emissions of CO for the first 60 minutes are calculated at

$$\text{Lbs CO} = 29,986 \text{ cfm} \div 359 \text{ cf/lb-mol} \times 28 \text{ lbs/lb-mol} \times 0 \text{ ppm} \times 60 \text{ mins} = 0.$$

Total emissions of CO for the next 27 minutes require that cumulative emissions under the straight-line increase at 44.5 ppm/minute be integrated, which involves  $\frac{1}{2}$  of  $t^2$ . Now,

$$\text{Lbs CO} = 29,986 \text{ cfm} \div 359 \text{ cf/lb-mol} \times 28 \text{ lbs/lb-mol} \times 44.5 \text{ ppm} \times 729/2 \text{ mins} = 38.$$

After 87 minutes, the concentration remains at 1,200 ppm, which is equivalent to 2.81 lbs/min, so the remaining flow over the nominal three-hour startup is simply

$$\text{Lbs CO} = 2.81 \text{ lbs/min} \times (180 - 87) = 261.$$

Thus, total flow of CO over the three-hour startup period is 299 lbs. Note that, as in the VOC analysis, certain assumptions assure that the results are conservatively high. First, all calculations are based on design flow, while the startup flow is likely to be less than the maximum number used. Second, because auto-ignition temperature of CO is 1,128°F, oxidation of CO is likely to occur well before the design temperature of 1,650°F is achieved. As was suggested in the case of VOC emissions, these equations will be used to calculate emissions from startup events, except that 60 and 87 will be used as fixed points, with only the third portion of the calculations varying from event to event.

2. **Afterburner temperature monitoring.** Permits that were considered in establishing the initial Part 70 permit had various averaging periods and frequencies of monitoring for the afterburners associated with different units at the facility. DEQ established a common standard of one-hour averaging for all afterburners, but applicant believes that three-hour averaging is a generally accepted standard for many industrial groups. Because EPA has used three-hour averaging in many situations, DEQ agrees that three-hour averaging is appropriate for the afterburners at the primary and secondary carbonizers, the activators, and the regenerator kiln.

3. **Baghouse differentials.** Conditions in the current Part 70 permit require that baghouses be operated within the pressure drop range recommended by the manufacturer and that a copy of the recommendations be present at the facility. Conditions also require a single pressure drop reading each day. Applicant suggests that the manufacturers' recommendations are too conservative and that relying on a single reading exaggerates the significance of the reading taken. Specifically, current conditions for baghouses include "manufacturer's specifications" for the acid wash plant dryer (EUG 7), "manufacturer's manual describing...parameters monitored ...recorded at least daily" for the coal processing plant (EUG 9), and "at least 1.0 inch WC or as recommended by the manufacturer,...1-hour rolling average" for the regeneration kiln/afterburner (EUG 15). EUG 9 contains two baghouses; one is called the Area 20 dust collector and the other is the coal dryer. Applicant proposes replacing these conditions with prescribed pressure differential ranges of 1" to 10" WC for EUG 7, EUG 15, and the Area 20 collector in EUG 9. The prescribed range for the coal dryer in EUG 9 would be 0" to 10" WC. Monitoring frequency for all four would be hourly, with compliance demonstrated on a rolling 12-hour basis.

After further discussion, applicant and DEQ agree to a range from 1" to 9" WC, 12-hour rolling average the acid wash dryer baghouse (EUG7), the Area 20 baghouse (EUG 9), and the Regeneration Plant offgas baghouse (EUG 15). Due to specific recommendations by the manufacturer, the coal dryer baghouse (EUG 9) pressure drop will be maintained between 0" to 9" WC. Additionally, each one-hour rolling average at or above 10" is an exceedance for all of the aforementioned baghouses.

4. **SO<sub>2</sub> compliance plan.**

Applicant states that it can effectively address all SO<sub>2</sub> requirements through emissions controls or enhanced dispersion coupled with reduced allowable emission limits. As discussed in conversation between DEQ and Norit, timelines for project proposal, project completion, and requisite testing are triggered by the issuance date of this permit modification. The compliance plan is added to the Specific Conditions.

5. **Secondary afterburner temperature monitoring.**

The afterburner on the secondary carbonizer has two thermocouples for monitoring temperature; one at the inlet and one at the outlet. The existing permit specifies a temperature of 1,650°F to demonstrate proper functioning of the control device. At present, the temperature is recorded at the outlet thermocouple. A temperature of 1,650° is reached at the inlet very quickly after startup of the carbonizer, but the length of the afterburner causes a delay in the time required to heat the entire volume, so the outlet thermocouple does not reflect that the destruction efficiency has been achieved. Applicant proposes that a dual system replace the single reading now in place. The inlet thermocouple would be used to demonstrate compliance until the outlet thermocouple reached 1,650°, or until one hour has elapsed from first introduction of solid feed to the secondary carbonizer. If the inlet thermocouple were to be used exclusively, maintenance of 1,650° at the inlet would cause dangerously high temperatures at the outlet. Steady state can

be easily maintained using the outlet thermocouple. The condition describing the current single monitor will be modified.

As noted in the discussion, granting any of these requests, with the exception of number 4, leads to changes in monitoring, so this application constitutes a significant modification of a Part 70 operating permit.

## **SECTION II FACILITY DESCRIPTION**

Process descriptions for the base operating scenarios for the VAC and SAC plants follow. No alternative operating scenarios are required to define operations at the facility. Commercial-grade natural gas is the primary fuel, with the facility being operated continuously.

### **Virgin Plant Operation**

- Receiving bituminous coal, subbituminous coal, and coal tar pitch by truck and rail from various sources; unloading and storing the coal and pitch.
- Drying the coal, blending with coal tar pitch, milling and compacting the coal/pitch material into uniform briquettes, and grinding the briquettes to the desired granule size.
- Processing the granulated briquettes through carbonizers (kilns), using natural gas as the primary fuel source for carbonization, to drive off the volatile matter and produce carbonized granules. Using heat from natural gas combustion in multiple hearth furnaces (activators) together with steam to activate the carbon; that is, to create a porous structure in the carbon.
- Additional milling to create powdered products. Handling, storing and loading of the activated carbon into bags or trucks for final shipment to customers.
- Using dilute hydrochloric acid (HCl) to remove, through a wash or leach operation, acid-soluble constituents from part of the activated carbon produced by the virgin plant.

The virgin plant utilizes the following five basic operating areas.

- Area 10 - Material Handling Operations
- Area 20 - Material Drying, Milling, Compacting and Sizing Operations
- Area 30 - Carbonizing and Activation Operations
- Area 40 - Finished Product Packaging Operations
- Acid Wash Plant Operations

### **Area 10 - Material Handling Operations**

Coal arrives at the plant via rail or truck and is unloaded in the raw material unloading building or at the coal unloading pile, and is moved within the unloading building, eventually to the working coal storage pile. Front-end loaders are used to transfer the coal into either the open coal storage area or into the dry coal storage building, as well as to maintain the coal piles in both areas. They also transfer coal from the piles to the coal hoppers at the beginning of Area 20

operations. The only particulate matter (PM) emission controls for the storage buildings and chutes are enclosures, some partial and others complete.

Coal is “reclaimed” from the coal storage and processing areas by a front-end loader that transports the reclaimed coal and maintains the reclaim coal pile. Front-end loaders transfer the coal to the reclaim coal hopper and transfer reclaimed coal to Area 20 operations.

Coal tar pitch, which is used in Area 20 as a coal binding agent, arrives at the plant via rail or bulk bags. The pitch received by rail is unloaded in the raw material unloading building, where it is transferred into piles within the pitch storage building. During rail offloading, negative pressure is maintained in the pitch storage building and any emissions are captured, reduced by the pitch storage building high efficiency panel filter, and vented through the pitch building exhaust stack. The pitch storage building is normally closed, except during periods of pitch maintenance/reclaim by front-end loader and while dropping pitch into the pitch hopper. Bulk bags are normally received in iso containers and are stored in the pitch building, in the SAC warehouse, or emptied onto the pitch building storage pile. Pitch is transferred to Area 20 via a front end loader and dumped into the pitch receiving hopper. The pitch hopper is enclosed, maintained under negative pressure, and controlled by the Area 20 dust collector.

### **Area 20 - Material Sizing and Drying Operations**

The purpose of Area 20 is to form the raw coal and pitch materials into a homogeneous material of uniform size and hardness, as required for activated carbon processing in Area 30. Phosphoric acid is added to incoming subbituminous coal as a processing aid. The process chemistry is such that there are no phosphoric acid emissions from this process. A purged air and steam coal dryer removes moisture from the coal. After the coal is dried, it is then pulverized and ground with the pitch and compacted into granular briquettes of uniform hardness. The briquettes are milled to the desired granule size. The granular material is dropped into a surge bin to control the transfer rate to Area 30 operations. The coal drying operation, Area 20, is subject to NSPS Subpart Y – Coal Preparation Plants. The coal dryer dust collector controls PM emissions from the coal dryer. The Area 20 dust collector controls PM emissions from other coal handling operations in Area 20.

### **Area 30 - Carbonizing and Activation Operations**

The primary processes within Area 30 are two external natural gas fired kilns, designated as the primary and secondary carbonizers, and the activators. The primary and secondary carbonizers are slowly rotating cylindrical furnaces in which the granular material to be processed is continuously agitated by “flights” as it moves forward in the kiln. Heat is supplied indirectly by gas-fired burners (heating jackets) that heat the outside of the rotation tube. Heat is transferred to the granular material by conduction and radiation. A counter-current flow of heated air is used to purge the tubes of the volatilized products and coal fines and to begin the reaction process to formulate the pore structure. The carbonizers drive off water and organic compounds and reduce the carbon/pitch feed material to elemental carbon. Thus, the material is said to be “carbonized.”

The granules produced in Area 20 are fed to the primary carbonizer. The primary carbonizer feed bag house controls emissions from the raw material feed system. The primary carbonizer operates at a lower temperature range and is the initial step in drawing off the volatile matter. This process continues at higher temperatures in the secondary carbonizer. Heated air with reduced oxygen is used in the secondary carbonizer to reduce oxidation of the carbon. The process off-gases contain particulate matter and volatile matter. Organic compounds are controlled by thermal oxidation in afterburners for both carbonizers. Waste heat boilers follow each afterburner. The secondary carbonizer has a multiclone particulate separator for PM control after the exhaust stream exits the waste heat boiler.

The carbonized granules are then fed to the east and west activators for further processing. These are two multiple hearth activation furnaces that operate in parallel. Each activation furnace consists of a refractory-lined cylindrical steel shield containing a series of horizontal refractory hearths. These hearths have alternate in-feed and out-feed directions, causing carbon granules to move completely across each hearth as they drop from one level to another. The hearths have the effect of creating a counter-current flow of carbon granules and hot process gases. Mechanical stoking is provided by a motor-driven revolving center shaft to which radial arms are attached. These arms have teeth (or plows) attached that move the material across the hearth to the peripheral or central openings, called drop holes, through which the granules drop to the next hearth. Multiple gas-fired burners provide auxiliary heat. Steam and process air is introduced selectively at various hearths from levels 2 through 12 to control and enhance the activation process. The upper hearths are used to heat the carbon and drive off any remaining volatile compounds. The remaining hearths are used for the actual activation of carbon. The process off-gases contain products of natural gas combustion, particulate matter, and some remaining volatile compounds. The offgas from each activation furnace passes through a cyclone for the removal of particulate matter. PM recovered by these units is generally salable material and is returned to the activation furnace. Offgas leaving each cyclone then enters an afterburner for each unit to oxidize any remaining organic matter. Exhaust gases from the afterburners may be emitted to the atmosphere directly or passed through a waste heat boiler first.

#### **Area 40 - Finished Product Packaging Operations**

Activated carbon from Area 30 is then screened, packaged, and/or milled into powdered activated carbon (PAC) as necessary in Area 40. Porous activated carbon granules are transferred from the activation furnaces and dropped into the Area 40 product screener. Emissions are controlled by the Area 40 Auxiliary Dust Collector. Depending on customer requirements, the activated carbon granules and fines can be sent to the powdered activated carbon (PAC) mill for milling or to the packaging area. The PAC mill dust collector controls PAC mill emissions and the Area 40 dust collector controls packaging emission.

#### **Acid Wash Plant Operations**

The acid wash plant (AWP) is an auxiliary process to the virgin activated carbon manufacturing plant. The AWP uses dilute hydrochloric acid (HCl) to remove, through a wash or leach operation, acid soluble constituents from activated carbon produced by the virgin plant. This auxiliary process allows the production of a higher quality activated carbon that is required by certain industrial processes, such as food processing or pharmaceuticals.

The activated carbon granules from the activation furnaces are transferred from Area 40 and dropped into the acid wash reactor in batches. The activated carbon is processed through a relatively high temperature, medium pressure reaction with dilute HCl. The batch is then water washed in several steps. A buffering/neutralizing agent may be used as a rinsing agent to adjust the quality of the plant water supply. Following the water washing, the batch is then de-watered. A natural gas-fired acid-wash dryer is used to reduce the moisture content. The final product is sized and packaged.

Emissions from the HCl storage tank pass through a caustic scrubber. PM emissions arising from the transfer of granules to the acid wash reactor are controlled by the Area 20 dust collector. PM emissions from the acid wash dryer, product screener and product bin are controlled by the AWP dust collector and vented through its stack.

### **Regeneration Plant Operation**

Spent activated carbon (used activated carbon that has adsorbed chemical constituents) is typically brought to the regeneration plant via bulk tank trucks and containers. Bulk tank trucks are pressurized to drive the spent activated carbon (SAC) into storage silos, where it is conveyed into a feed silo, and then into the regeneration kiln. Alternatively, bulk trucks are offloaded onto the SAC storage pad, which is a contained, outdoor unit. SAC received in containers is received and stored/staged in a warehouse or stored outside. Bulk SAC is transferred from the SAC pad to the Regen kiln feed hopper (F hopper). Containerized SAC is transferred from the warehouse and manually poured into the F hopper or poured onto the SAC pad.. The regeneration kiln drives the adsorbed chemical constituents from the spent carbon. After regeneration, the reactivated carbon is cooled in a non-contact water-cooled heat exchanger, then screened and packaged or bulk loaded into trucks.

Emission controls in the regeneration process include an afterburner, a baghouse, and an alkaline scrubber (for HCl and SO<sub>x</sub> removal). When the afterburner is not in service, the silos vent any VOC emissions through a carbon canister. The Regeneration Product Area Dust Collector controls packaging emissions. Truck loading operations use only a chute to control emissions.

## **SECTION III. EQUIPMENT**

Emission units (EUs) have been arranged into Emission Unit Groups (EUGs) in Section III (Equipment), based on activity, type of control, and permitting status.

### **EUG 1 Facility-wide**

#### **EUG 2 Primary Carbonizer/Afterburner**

<b>EU</b>	<b>Point ID</b>	<b>Name/Model</b>	<b>Const. Date</b>
17	SV-VP-005	Primary Carbonizer/ Afterburner/Waste Heat Boiler	1990

The PC afterburner has three burners with 12 MMBTUH total heat input.

#### **EUG 3 Secondary Carbonizer/Afterburner**

<b>EU</b>	<b>Point ID</b>	<b>Name/Model</b>	<b>Const. Date</b>
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12	SV-VP-007a,b	Sec. Carb./Multiclone/Afterburn/ Waste Heat Boiler	1979*
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\*Multiclones were installed and became operational 10/9/2006.

Oxygen content of sweep air supplied to the SC is depleted by a 14.6 MMBTUH burner. The SC afterburner has two burners with 1.9 MMBTUH total heat input. The (a) stack is designated for the direct discharge of the afterburner and the (b) stack is designated for the discharge of the waste heat boiler. The afterburner also has supplemental gas feed used as necessary. Combined maximum potential heat input is estimated at 18 MMBTUH.

#### EUG 4 Primary Carbonizer Heating Jacket

EU	Point ID	Name/Model	Const. Date
21	SV-VP-006	Primary Carbonizer Heating Jacket	1990

The primary carbonizer (PC) heating jacket has eight burners with total heat input of 8 MMBTUH.

#### EUG 5 Secondary Carbonizer Heating Jacket

EU	Point ID	Name/Model	Const. Date
22	SV VP 008	Secondary Carbonizer heating jacket	1979

The secondary carbonizer (SC) heating jacket has 8 burners with 10MMBTUH total heat input.

#### EUG 6 Multiple Hearth Activation Furnaces

East and west activation furnaces each have 20 small burners with total heat input of 25 MMBTUH and each has a single 2.2 MMBTUH burner in its respective afterburner. Each afterburner also has a supplemental natural gas supply line rated at 22 MMBTUH.

EU	Point ID	Name/Model	Const. Date
10	SV-VP-009a, b	Activation Furnace – East	1979
11	SV-VP-010a, b	Activation Furnace – West	1979

Exhausts from each hearth flow through a cyclone for PM removal/recovery and to an afterburner for destruction of organic material. A portion of both gas streams vent through a common waste heat boiler (a) or are discharged directly to the atmosphere (b).

#### EUG 7 Acid Wash Dryer

The acid wash plant (AWP) dryer has heat input rated at 3.3 MMBTUH. This burner was previously identified with a rate of 2.2 MMBTUH, but that was largely an average of measured flow. Burner flow was established in February 2006 to be a maximum of 3.3 MMBTUH.

EU	Point ID	Name/Model	Const. Date
23	SV-VP-015	Acid Wash Plant Dryer	1989

**EUG 8 Material Handling & Transfer – Controlled**

EU	Point ID	Description	Throughput
24	SV-VP-004	Transfer of coal from the carbonizer feed bin to the primary carbonizer	10 TPH

**EUG 9 Coal Processing Plant (Area 20)**

The coal crusher, compactor, and Area 20 screen each have 10 TPH capacity.

EU	Point ID	Name/Model	Const. Date
8	SV-VP-002	Coal Preparation Plant Dryer	1994
9	SV-VP-003	Coal Preparation Bowl Mill	1994
9	SV-VP-003	Coal Preparation Compactor w/Crusher and Screener	1994
9	SV-VP-003	Coal Preparation Double Roll Crusher	1994

**EUG 10 Material Handling, Transfer, Traffic, & Erosion – Uncontrolled**

Subbituminous is shortened to subbit for this table

EU	Point ID	Description	Throughput
1a	VP10-SUB-01	Subbit coal railcar unloading into hopper	35TPH
1d	VP10-SUB-02	Subbit coal drop to elevator from unloading hopper	20 TPH
1e	VP10-SUB-03	Subbit coal drop from elevator to working subbit coal storage pile adjacent to unloading building	20 TPH
4	VP10-SUB-05	Front end loader drop into subbit coal storage pile in open storage area or in dry coal storage building	20 TPH
7	VP10-SUB-10	Front end loader drop of subbit coal into subbit coal loading hopper	20 TPH
2	VP10-PIT-01	Pitch railcar unloading into hopper	20 TPH
3	VP10-PIT-02	Pitch drop onto elevator from unloading hopper	20 TPH
1o	VP10-BIT-03	Bituminous coal unloading from truck into bituminous unloading pile	200TPH
1	VP10-BIT-05	Front end loader drop of bituminous coal into coal storage area or dry coal storage building	200 TPH
7	VP10-BIT-09	Front end loader drop of bituminous coal into Load Hopper	20 TPH
1	VP10-REC-03	Front end loader drop of Reclaim coal into truck	120 TPH
1	VP10-REC-05	Front end loader drop of Reclaim coal into Load Hopper	20 TPH
28	VP40-PACLD	PAC Bulk loading station into trucks	20 TPH
NA	SV-REGN-004	Truck unloading onto SAC storage pad	40 TPH
NA	REGN-SKUL	Regen F Hopper loading	3 TPH

**EUG 11 Acid Wash Plant Material Handling & Transfer – Controlled**

The AWP product screen has 1.5 TPH capacity.

EU	Point ID	Description	Throughput
23	SV-VP-015	Acid wash dryer drop to product screener	1.5TPH
23	SV-VP-015	Acid wash screener drop to product bin	1.5 TPH
23	SV-VP-015	Acid wash plant product packaging	1.5TPH

### EUG 12 Material Handling & Transfer – Controlled

The fines screen associated with the GAC product screen has capacity of 4 TPH.

EU	Point ID	Description	Throughput
3	SV-VP-001	Pitch drop from elevator onto pitch building distribution conveyor belt	35TPH
3	SV-VP-003	Pitch drop into Pitch feed Bin	20 TPH
13	SV-VP-012	Activated carbon from activated furnaces transfer into product screener and screening	4 TPH
13	SV-VP-012	Fines transfer from product screener to fines bin	4 TPH
13	SV-VP-012	Fines transfer from product screener to oversize bin	4 TPH
20	SV-VP-013	Transfer activated carbon from fines bin into PAC mill	4 TPH
13	SV-VP-014	PAC mill to packaging	4 TPH
13	SV-VP-012	Product screener transfer into packages	4 TPH
9	SV-VP-003	Activated carbon transfer into acid wash feed hopper	4 TPH
NA	Mobile Equipment	Pneumatic transfer of product from tanker to rail car	8 TPH

### EUG 13 Material Handling, Transfer, Traffic, & Erosion – Uncontrolled

EU	Point ID	Description	Throughput
4	VP10-SUB-04	Front end loader transfer from working storage to open subbituminous storage or dry coal storage building	20 TPH
5	VP10-SUB-06	Front end loader maintenance of subbituminous open coal storage area or dry coal storage area or dry coal storage building including transfer between open and dry coal storage building and to subbituminous coal loading hopper	20 TPH
4	VP10-SUB-07	Wind erosion of subbituminous coal working storage pile	
6	VP10-SUB-08	Wind erosion of subbituminous coal storage pile	
6	VP10-SUB-09	Wind erosion of subbituminous coal storage pile in dry coal storage building	
3	VP10-PIT-06	Front end loader maintenance of pitch and transport to load hopper	20 TPH
1m	VP10-BIT-01	Travel by truck carrying bituminous coal on unpaved road (Loaded)	
7	VP10-BIT-02	Travel by truck carrying bituminous coal on unpaved road (Empty)	
5	VP10-BIT-04	Movement of bituminous coal from unloading area to coal storage area or dry coal storage building by front end loader	20 TPH
5	VP10-BIT-06	Maintenance of bituminous coal storage pile by front end loader and transfer to loading hopper	20 TPH
6	VP10-BIT-07	Wind erosion of bituminous coal in open coal storage area	
6	VP10-BIT-08	Wind erosion of bituminous coal in dry coal storage building	
5	VP10-REC-01	Loaded reclaim coal truck travel on unpaved roads	
5	VP10-REC-02	Empty reclaim coal truck travel on unpaved roads	
5	VP10-REC-04	Reclaim coal pile maintenance by loader, transfer to loading hopper	
6	VP10-REC-06	Wind erosion of reclaim coal pile	
NA	SV-REGN-004	Wind erosion of SAC pile	
NA	Mobile Equipment	Transfer of bulk bag product to tanker via mobile belt conveyor	14 TPH

**EUG 14 Truck Unloading**

EU	Point ID	Description
NA	SV-REGN-001	Truck loading into storage silos and transfer from storage to feed silo
NA	SV-REGN-002	Truck unloading into auxiliary silo and neutralization
NA	SV-REGN-003	Truck unloading into auxiliary silo and neutralization

**EUG 15 Regeneration Kiln/Afterburner**

The regeneration kiln and afterburner have combined heat input of 8 MMBTUH.

EU	Point	Name/Model	Const. Date
18	SV-REGN-001	Regeneration Kiln / Afterburner	1991

**EUG 16 Regeneration Plant Material Handling**

The regeneration plant product screen has 2 TPH capacity.

EU	Point	Description	Throughput
19	SV-REGN-003	Packaging area material handling	2
NA	SV-REGN-004	Regeneration product collector	2
NA	REGN-TRKLD	Regen bulk truck loading (drop into top of trucks at facility on northwest side of regeneration plant)	20

**EUG17 Regeneration Plant Bulk Handling**

EU	Point ID	Description
27	REGN-PACLD	Regeneration plant PAC mill bulk truck loadout - controlled

**EUG18 Hydrochloric Acid Storage Tank**

EU	Point ID	Description	Const. Date
15	SV-VP-016	Storage tank	N/A

**EUG 19 NSPS Subpart Dc Boiler (Permit No. 98-171-C (M-1))**

EU	Point	Description	Const. Date
19	SV-VP-019	24.5 MMBTUH Cleaver-Brooks CBLE600	1/18/2008

**EUG 20 Cooling Tower**

EU	Point ID	Description	Const. Date
20	SV-VP-020	Cooling Tower	N/A

Additional information concerning throughput capacity and stack geometry are presented in the following tables. The column labeled ID shows the identification number used for each stack in the 2007 annual emission inventory.

ID #	EU	Ht. (ft)	Diam. (ft)	Flow (ACFM)	Temp. (°F)
19103	Coal dryer	50	50" × 34"	30,000	130
9063, 30880	Area 20 dust collect	75	1.3	17,000	120
TBD	MHF Common Stack	126	7	120,000	675
38590	Activator boiler	120	3.5	35,000	750

ID #	EU	Ht. (ft)	Diam. (ft)	Flow (ACFM)	Temp. (°F)
9065	Sec Carb Kiln	90	2.5	13,000	547
9064	Pri Carb Kiln	70	2.9	33,700	525
9073	Area 40 dust collect	94	1.5	7,200	130
19104	Area 40 Aux DC	70	2.0	8,000	130
19105	Regen Kiln	92	2.5	15,000	170
19106	Regen Area DC *	63	2.0	8,550	110
9077	PAC Mill DC	70	16" × 21"	1150	100
9066	PC Jacket	40	1.5	950	800
9067	SC Jacket	26	1.5	950	800
9069	AWP dryer	50	1.3	7000	180
9070	PC Feed DC **	75	10" × 10"	7500	100
9072	Regen PAC Mill	60	1.3	1,200	180
38706	Pitch Bldg Filter Stack	47	3.5	10,000	100

\* Also identified as the Product Area Dust Collector

\*\* Also identified as the Primary Carbonizer Surge Bin

### xxxSECTION III. EMISSIONS

Calculating emissions from the carbonizers and activators is difficult. Emissions from the primary carbonizer were authorized in Permit No. 88-105-O based on stack testing results extended to worst-case conditions. In this instance, a comparison of what was then called New Technology Mode (processing bituminous coal) was made with the Current Technology Mode (processing subbituminous coal) and extended to maximum possible throughput. No emission limits were established for pollutants at the secondary carbonizer and the activators in the initial operating permit. As a result of the consent order (CO) discussed earlier, the Subchapter 19 standards contained in Appendix of OAC 252:100 were to be applied to the carbonizers and activators. As an additional consequence of the CO, PSD analysis required by the CO was submitted. This analysis used estimated emissions from each affected unit, using a material balance calculation. PM emissions from the VAC can be assessed by considering the amount of dry material feed and the amount of dry material product. This can be refined by reviewing the amount of dry feed at each of the processing units; that is, at the primary carbonizer, the secondary carbonizer, and at the activator hearths, allowing a calculation of what portion of total emissions is attributable to each process component. Further considerations address ash content of the raw material and review both the genesis and the fate of both ash and non-ash PM. For the purposes of modeling, cyclones are assumed to be 80% efficient and afterburners 90% efficient, noting that afterburners affect only the non-ash PM. This methodology involves confidential data, so no further discussion is offered here, but this problem is addressed in the Specific Conditions. The following table shows both sets of potential limits. For the purpose of reporting PM emissions using the model described above, all values of PM are assumed to be PM<sub>10</sub>. Annual values are based on 8,760 hours of operation. The activators are listed individually, but share a common exhaust header.

Unit	Subchapter 19 standard		Material balance calculation	
	Lb/hr	TPY	Lb/hr	TPY

Primary carbonizer	51.52	225.62	46.5	203.51
Secondary carbonizer	35.86	157.06	30.74	134.66
East activator	30.79	134.86	30.15	132.02
West activator	30.79	134.86	30.15	132.02

The facility elected to use the material balance calculations as emission limits for TV permitting purposes. As new process and test data become available, the model will be subject to refinement.

Emissions of NO<sub>x</sub> are calculated based upon 2004 stack testing results. There is no reason to assume linearity; that is, emissions of this pollutant will probably not increase linearly with increased production, because thermodynamic considerations are not predictable. The facility's consultant suggested that the emissions be treated as varying directly with the square of the production rate. Because these calculations reveal proprietary process information, only the results are listed below.

Emissions of CO are calculated using 1997 test data for the primary carbonizer and 2009 test data for the other sources, because these test data are uniformly higher than 2004 Metco test data used in previous analyses. In addition, a safety factor of 100% is applied to each, yielding 53.03 TPY.

Emissions of VOC from the carbonizers and MHFs may exist, but residence time in the afterburners is sufficient that only very small amounts will be released to atmosphere. No limits will be set for VOC emissions from these units.

Total emissions of SO<sub>2</sub> from the VAC are estimated based on material balance for the entire process. The sulfur content of the raw material (feed) is known or measurable, as is the sulfur content of the product. The amounts of feed and of resulting product are also known factors. The loss in sulfur between inlet and outlet may be calculated from these known data, and by assuming that all of this sulfur is stoichiometrically oxidized to sulfur dioxide, we arrive at emissions of SO<sub>2</sub>.

Although some stack tests showing the amount of SO<sub>2</sub> from each of the potential sources have been performed, varying thermodynamic conditions and minor changes in the physical attributes of the feed make it impossible to predict the proportion of SO<sub>2</sub> emissions attributable to each stack. Modeling parameters used for the retroactive PSD application mentioned previously suggest a division of 7.9% at the primary carbonizer, 23.6% at the secondary carbonizer, 16.8% at the activator boiler, and 51.7% at the new activator stack. Total emissions allocated to these emission points, assuming continuous operation at maximum throughput and high sulfur content, is 1,658 TPY. Although this number will be used as a permit limit, the voluntary limit accepted by the facility on raw material sulfur content will yield emissions consistently below this number.

Natural gas is used in the primary and secondary carbonizer heating jackets, the secondary carbonizer oxygen consumer, the acid wash plant dryer, the regeneration kiln the various afterburners, and the package boiler. Emissions for these sources are based upon continuous

operation, their maximum burner rating, and Chapter 1.4 of AP-42 (7/98), assuming 1,020 BTU/CF. All PM emissions from these combustion sources are assumed to be PM<sub>10</sub>.

Emissions from the regeneration plant are based on varying criteria. For instance permit limits for NO<sub>x</sub>, CO, HCl, and SO<sub>2</sub> are based on stack test results with an added safety factor of 20%. The VOC limit assumes a conservatively high 60% of the feed is VOC and then uses the guaranteed 99.99% efficiency of the scrubber to arrive at a limit. The PM limit for process offgas is based on a BACT standard of 0.031 g/dscf. Extensive correction to acfm data is necessary because of the water vapor-saturated condition of the 15,000 acfm exhaust. PM emissions from product handling are calculated assuming 99% control of 8,000 acfm at 1 g/dscf, using an overall safety factor of two. Finally, PM emissions from the silo vent were originally based on a factor of 4.8 lbs/hour from the revoked OAC 252:100-27-5, which is now found in Appendix G. Because emissions from the vent can occur only in the event of failure of the process offgas emission control equipment, the annual effect of this is assumed to be no more than 240 hours per year, which is then further multiplied by a safety factor of two.

Emissions from the Area 20 coal dryer were calculated using the NSPS Subpart Y limitation of 0.031 g/DSCF and a flow rate of 1,329 DSCFM. Subpart Y performance testing confirmed compliance. The emission factor for coal crushing was taken from the U.S. EPA FIRE database for SCC 3-05-010-10.

Emission factors for each drop source were calculated using Equation 1 from Chapter 13.2.4 of AP-42 (1/95),

$$E = k(.0032)(U/5)^{1.3} \div (M/2)^{1.4}, \text{ where}$$

E = emissions (lb/hr)

K = dimensionless constant (0.35 for PM<sub>10</sub>)

U = wind velocity (10.3 mph for open areas in the Tulsa vicinity, 0.1 mph for enclosed areas, and 1.0 mph for containers to account for turbulence)

M = moisture content (dependent on the process analyzed).

Moisture content of various materials included 4.40% for bituminous, 3% for pitch, 19.04% for subbituminous, 5.17% for reclaim, 1.14% for PAC, 1.22% for virgin bulk, and 29% for SAC. Total emissions of PM for this category for 2007 was reported at only 0.081 TPY, of which 0.057 TPY was PM<sub>2.5</sub>. Based on these small totals, the individual calculations were not reviewed.

PM emissions from the acid wash plant (AWP) are based upon a material balance of approximately 18,000 lb/batch with an input rate of 3000 lb/hr and 850 batches a year. All PM emissions from the AWP are assumed to be PM<sub>10</sub>. HCl emissions from the AWP dryer are based on a factor of 2.5 lbs of HCl per ton of activated carbon. Using the known capacity of 3000 lb/hr and an annual throughput of 15,000,000 pounds yields 3.75 lbs/hr and 9.38 TPY of HCl.

PM and PM<sub>10</sub> emissions from vehicle travel are based upon a certain number of miles driven per year and AP-42 (1/95), Chapter 13.2.2, Equation 13.2.2.2-(1). Since the wind erosion emission calculation for large storage piles in AP-42 (1/95), Chapter 13.2.5, is a stepwise process and is very complex, the PM emissions from the active coal storage piles are based upon calculations using Equation 5 from Chapter 4 of the *Air Pollution Engineering Manual*, Page 136. Fifty

percent of all PM emissions from the storage piles is considered PM<sub>10</sub>. Total emissions of PM<sub>10</sub> reported for 2007 was only 6.23 TPY, of which 4.36 TPY was PM<sub>2.5</sub>. Based on these small totals, the individual calculations were not reviewed.

A cooling tower located in Area 30 receives non-contact cooling water from the east and west activator product coolers and regeneration plant product cooler. The particulate emission rate from this unit assumes that the 100% of the TDS entrained in the liquid drift is converted to PM<sub>10</sub>. The estimated maximum total flow to the cooling tower is 300 gpm. The TDS ranges from 350 to 650 ppm. From AP-42 table 13.4-1. the liquid drift is assumed to be 0.02% of the total flow. Therefore, the maximum PM<sub>10</sub> emission rate is calculated as follows. Note that these calculations are performed only for completeness, because this activity is defined as Trivial.

$$\begin{aligned} \text{PM}_{10} &= (\text{lbs/hr flow})(\% \text{ liquid drift}/100)(\text{ppm TDS}) \\ &= (300 \text{ gpm})(60 \text{ min/hr})(8.34 \text{ lbs/gal})(0.02/100)(650/1,000,000) \\ &= 0.02 \text{ lbs/hr} \end{aligned}$$

PTE numbers used in the last four rows of the following table were calculated for earlier permit efforts and may not accurately reflect the facility's true potential. This table is identified as a listing of PTE, but it is actually a collection of established permit limits, estimates of emissions, emission inventory data, and a few PTE calculations. It should be viewed as only a rough estimate of the facility's potential.

#### Total Potential Emissions

Emission Units	NO <sub>x</sub>		CO		VOC		PM		PM <sub>10</sub>		SO <sub>2</sub>	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Primary Carb.	11.3	49.3	1.07	4.67			46.5	204	46.5	204	379	1,658
Secondary Carb.	23.4	103	2.89	12.7			30.7	135	30.7	135		
Activator stack	30.8	135	3.04	13.3			15.1	66.0	15.1	66.0		
New activator stack	94.6	414	5.11	22.4			45.2	198	45.2	198		
PC-Jacket	0.78	3.44	0.66	2.89	0.04	0.19	0.06	0.27	0.06	0.26	0.01	0.02
SC-Jacket	1.23	5.37	1.03	4.51	0.07	0.30	0.09	0.41	0.09	0.41	0.01	0.03
AWP Dryer	0.59	2.58	0.50	2.16	0.03	0.14	0.05	0.20	0.05	0.20	<0.01	0.01
SC-O <sub>2</sub> Consumer	1.43	6.27	1.20	5.27	0.08	0.35	0.11	0.48	0.11	0.48	0.01	0.04
Regen Kiln/Dryer	1.97	8.62	2.68	11.74	0.40	1.75	0.27	1.18	0.06	0.27	4.88	21.4
Regen product							1.46	6.57	1.46	6.57		
Regen silo vent							4.80	1.15	4.80	1.15		
Coal Dryer							0.35	1.55	0.35	1.55		
Crushing							0.01	0.04	0.01	0.04		
Screening							<0.01	<0.01	<0.01	<0.01		
Material Handling							0.07	0.29	0.03	0.13		
Roads							3.13	13.70	1.44	6.30		
Piles							0.29	1.26	0.10	0.44		
<b>TOTALS</b>	<b>166</b>	<b>728</b>	<b>18.2</b>	<b>79.6</b>	<b>0.62</b>	<b>2.73</b>	<b>148</b>	<b>648</b>	<b>146</b>	<b>640</b>	<b>384</b>	<b>1,679</b>

The only HAP with significant emissions is hydrogen chloride. The following table lists sources with applicable HCl limits.

#### HCl Emissions

Emission Unit	Lb/hr	TPY
Acid Wash Plant Dryer	4.09	9.29

Hydrogen Chloride Tanks	0.53	1.37
Regeneration Plant	4.08	17.87
<b>Totals</b>	<b>8.70</b>	<b>28.53</b>

#### SECTION IV. INSIGNIFICANT ACTIVITIES

Insignificant activities identified in the application are listed below. Appropriate record keeping of activities indicated below with “\*” is specified in the Specific Conditions.

\* Stationary reciprocating engines burning natural gas, gasoline, aircraft fuels, or diesel fuel which are either used exclusively for emergency power generation or for peaking power service not exceeding 500 hours/year. The regeneration unit has a skid-mounted 350 kW Cummins Onan 350DFCC engine used for emergency power generation. It has a 486-gallon belly tank and operates approximately 182 hours/year, based on programming that causes it to run for 30 minutes each Friday. The facility uses a stationary Detroit Diesel 6-71 engine to power a backup fire water pump. The engine is tested and operated weekly for less than 30 minutes per occasion. Normal annual operation is less than 182 hours. A 125-gallon diesel tank supplies fuel to the unit.

Compressed air diesel?

Space heaters, boilers, process heaters, and emergency flares less than or equal to 5 MMBTU/hr heat input (commercial natural gas). The facility has heaters and process jackets which are rated less than 5 MMBTUH and others may be used in the future.

\* Emissions from fuel storage/dispensing equipment operated solely for facility owned vehicles if fuel throughput is not more than 2,175 gallons/day, averaged over a 30-day period. The facility has a 320-gallon gasoline tank and a 320-gallon diesel tank located at the facility. The facility used 11,053 gallons of diesel and 1,390 gallons of gasoline during 2007 for all mobile and stationary equipment, resulting in fuel throughput much less than 2,175 gallons per day for each tank.

Welding and soldering operations utilizing less than 100 pounds of solder and 53 tons per year of electrodes. Welding is conducted only for routine maintenance and is not part of the process operations. This is considered a trivial activity and recordkeeping will not be required in the Specific Conditions.

Torch cutting and welding of less than 200,000 tons of steel fabricated per year. These activities are routine maintenance and are not conducted as part of process operations. Such activities are considered to be trivial and recordkeeping will not be required in the Specific Conditions.

Surface coating operations that do not exceed a combined total usage of more than 60 gallons/month of coatings, thinners, and clean-up solvents, at any one emission unit. The facility conducts painting for maintenance reasons, which is considered a trivial activity, and recordkeeping will not be required in the Specific Conditions.

Exhaust systems for chemical, paint, and/or solvent storage rooms or cabinets, including hazardous waste satellite (accumulation) areas. The facility has chemical, paint, and/or solvent storage rooms or cabinets.

Cold degreasing operations utilizing solvents that are denser than air. The facility has a unit using petroleum distillate in its maintenance shop. Only 30 gallons were used in 2007.

Sanitary sewage collection and treatment facilities other than incinerators and Publicly Owned Treatment Works

\* Activities that have the potential to emit no more than 5 TPY (actual) of any criteria pollutant. There are two separate laboratories (R&D and QC) at the Pryor facility. The various vents for both labs are listed in the following table. All emissions are trace amounts. The estimated operating hours are tabulated.

Area	Hood/vent	ht (ft)	dia (in)	hrs/ day	days/ month	Expected emission type (trace)
R&D	oven	15	18	3	4	volatile matter from hi temp treatment of spent carbon
R&D	Prep room hood 1	15	18 × 18	3	15	dust removal from riffing
R&D	Prep room hood 2	15	18 × 18	3	15	volatile matter from drying spent carbon
R&D	Prep room crusher and mill vent	15	6	2	2	coal dust removal
R&D	Acid fume hood	15	(2) × 12	2	2	acid fumes
R&D	Carbonizer hood	15	24 × 24	8	2	pitch and volatile matter from coal carbonization
R&D	Activator hood	15	24 × 24	8	2	CO, CO <sub>2</sub> from thermal activation
QC	Riffle hood and Alpine exhaust to baghouse	15	8	5	30	Particulate
QC	Furnace hood	17	6	0.5	30	Heat, water vapor, VM from coal and product
QC	Duralab hoods 1 and 2	14	8	1	30	(1) Butane, VOC; (2) HCl (truck samples only)

## SECTION V. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions)

[Applicable]

Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference)

[Applicable]

This subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations listed in OAC 252:100, Appendix Q. These requirements are addressed in the “Federal Regulations” section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]

Subchapter 3 enumerates the primary and secondary ambient air quality standards and the significant deterioration increments. At this time, all of Oklahoma is in “attainment” of these standards.

OAC 252:100-5 (Registration, Emissions Inventory and Annual Operating Fees) [Applicable]

Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. Emission inventories were submitted and fees paid for previous years as required.

OAC 252:100-7 (Permits for Minor Facilities) [Not Applicable]

Subchapter 7 sets forth the permit application fees and the basic substantive requirements for permits for minor facilities. However, Subchapter 7 previously contained the requirements for construction and operation of major sources also. This facility was constructed and operates under numerous permits, as listed in Section I above. With the exception of Permit No. 98-171-C (M-1) and pending Permit No. 98-171-C (M-2) all of the permits were issued under the authority of Subchapter 7. Except for the pending permit, all previous permits will be superseded by this Title V operating permit and all future permitting will rely on Subchapter 8.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]

Part 5 includes the general administrative requirements for Part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the “Insignificant Activities” or “Trivial Activities” thresholds require prior notification to AQD and may require a permit modification. Insignificant activities mean individual emission units that either are on the list in Appendix I (OAC 252:100) or whose actual calendar year emissions do not exceed the following limits.

- 5 TPY of any one criteria pollutant
- 2 TPY of any one hazardous air pollutant (HAP) or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for a HAP that the EPA may establish by rule

Emissions limitations have been established based on information from stack testing, previous operating permits, and the permit application.

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]

Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the

owner or operator of the facility in response to this event. Request for affirmative defense, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Prohibition of Open Burning) [Applicable]  
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Particulate Matter (PM)) [Applicable]  
Section 19-4 regulates emissions of PM from new and existing fuel-burning equipment, with emission limits based on maximum design heat input rating. Fuel-burning equipment is defined in OAC 252:100-19 as any internal combustion engine or gas turbine, or other combustion device used to convert the combustion of fuel into usable energy. The natural gas combusted in the following equipment is subject to the requirements of this subchapter. Several of the afterburners at this facility vent their exhaust gasses to waste heat boilers. Although afterburners are typically considered to be pollution control equipment not subject to Section 19-4, in this instance they provide usable heat to the boilers and are subject to the Appendix C limits. Table 1.4-2 of AP-42 (7/98) lists total PM emissions for natural gas-fired external combustion units to be 7.6 lbs/million scf or about 0.0076 lbs/MMBTU, which is in compliance. Table 13.5-1 of AP-42 (9/91) suggests a range of values for "soot" from industrial flares. The afterburners' exhausts fuel waste heat boilers, and smoky exhaust would cause fouling, so it is likely that the factor of zero  $\mu\text{g/L}$  is correct, but a conservatively high 20  $\mu\text{g/L}$  is used to assure compliance. Exhaust rates and heat input are assumed at their various maxima.

Equipment	Maximum Heat Input (MMBTUH)	Emissions in lbs/MMBTU	
		Appendix C Limit	Potential Rate
PC Heating Jacket	8	0.60	0.008
SC Heating Jacket	10	0.60	0.008
East Activation Furnace	24	0.49	0.008
West Activation Furnace	24	0.49	0.008
Acid Wash Plant Dryer	3.3	0.60	0.008
PC Afterburner	12	0.60	0.008
SC Afterburner	18	0.60	0.008
Package Boiler	24.5	0.49	0.010*

\*Manufacturer supplied data

Section 19-12 limits particulate emissions from new and existing directly fired fuel-burning units and/or emission points in an industrial process based on process weight rate, as specified in Appendix G. As shown in the following table, all emission points are in compliance with Subchapter 19. Note that the primary and secondary carbonizing processes include two industrial processes each; namely, carbonizing and transporting. Additionally, the process weight for the carbonizing process includes raw material feed and process (reaction) air. The activation furnaces or multi-hearth furnaces (MHF) have three sections, each of which is subject to a limit. Process weight includes raw materials, reaction air, and steam. The East and West MHFs are identical in design.

Equipment	Process Rate (TPH)	Emissions (Lbs/hr)	
		Appendix G Limit	Potential Rate
Area 20 crusher	10	19.2	4.46 <sup>1</sup>
Area 20 compactor	10	19.2	
Area 20 bowl mill	10	19.2	
Area 40 product screen	4	10.4	0.035 <sup>2</sup>
Area 40 fines screen	2	6.52	0.017 <sup>2</sup>
Regeneration product screen	2	6.52	0.017 <sup>2</sup>
Drops (9)	20 each	30.5 each	0.022 <sup>2</sup> each
Drops (7)	4 each	10.4 each	0.004 <sup>2</sup> each
Drops (2)	2 each	6.52 each	0.002 <sup>2</sup> each
Truck unloading	20	30.5	0.002 <sup>2</sup>
Railcar unloading (2)	20 each	30.5 each	0.002 <sup>2</sup> each
Front end loader (5)	20 each	30.5 each	0.002 <sup>2</sup> each
Front end loader (3)	N/A	N/A	
Thermal dryer	10	19.2	0.05 <sup>1</sup>
Primary (carbonizing)	24	34.48	13.3 <sup>3</sup>
Primary (transporting)	8.6	17.33	
Secondary (carbonizing)	9.75	18.85	14.0 <sup>4</sup>
Secondary (transporting)	8.38	17.03	
MHF (combined)	57.04	61.58	24.5 <sup>6</sup>
MHF (combined)	57.04	61.58	24.5 <sup>6</sup>
Regeneration kiln	3.3	9.1	0.3 <sup>5</sup>
Acid wash plant	1.2	4.6	3.2 <sup>6</sup>

- 1 4/27/94 stack test
- 2 Table 11.19.2-2, AP-42 (8/04)
- 3 110% of 6/24/04 stack test
- 4 Combination of afterburner and WHB stack test results, 5/2009
- 5 9/15/95 stack test
- 6 Combination of stack and WHB stack test results, 5/5/2009

Emissions of PM from material handling and transport are very low in comparison to the allowable rate of emissions under this subchapter. No controls will be required in the permit except for precautions taken to minimize fugitive dust.

OAC 252:100-25 (Visible Emissions and Particulates)

[Applicable]

No discharge of greater than 20% opacity is allowed except for short-term occurrences that consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. When burning natural gas in any of the combustion devices at the facility, there is very little possibility of exceeding these standards. The thermal dryer, crusher, compactor, and coal conveying, transfer, and loading equipment are not subject to Subchapter 25 since they are subject to an opacity limitation of NSPS Subpart Y. Various operations at the

facility have emissions of certain pollutants controlled by afterburners, cyclones, or baghouses. The permit will require operation of these devices during operation of the related production equipment and will require appropriate maintenance of all control devices to ensure the opacity standard is met. The permit will also require weekly observation of the associated stacks, and opacity readings to be conducted if visible emissions are detected.

OAC 252:100-29 (Fugitive Dust)

[Applicable]

No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. The facility has numerous drop points and material processes. Normal operation of the facility with the control devices in operation should not cause a problem in this area. However, reasonable precautions to control fugitive dust emissions from the operations will be stated in the permit.

OAC 252:100-31 (Sulfur Compounds)

[Applicable]

Part 2 limits emissions of sulfur dioxide (SO<sub>2</sub>) from any one existing source or any one new petroleum and natural gas process source subject to OAC 252:100-31-26(a)(1). Ambient air concentrations of SO<sub>2</sub> at any given point shall not be greater than 1,300 µg/m<sup>3</sup> in a 5-minute period of any hour, 1,200 µg/m<sup>3</sup> for a 1-hour average, 650 µg/m<sup>3</sup> for a 3-hour average, 130 µg/m<sup>3</sup> for a 24-hour average, or 80 µg/m<sup>3</sup> for an annual average. As discussed in Section III (Emissions) above, SO<sub>2</sub> emissions are difficult to quantify for individual emission points. Modeling performed for the retroactive PSD application mentioned earlier showed worst-case aggregate concentrations of 220 µg/m<sup>3</sup> for a 3-hour average, 86.4 µg/m<sup>3</sup> for a 24-hour average, and 12.1 µg/m<sup>3</sup> for an annual average. No individual source could have a concentration higher than any of these, so the 3-hour, 24-hour, and annual standards are met. No analysis of the 5-minute or 1-hour standards were offered in the modeling, and it would be inappropriate to use the scaling factors of a model such as Screen3 to evaluate them, although such an approach would yield worst-case results of 391 µg/m<sup>3</sup> for the 5-minute average and 244 µg/m<sup>3</sup> for the 1-hour average. Instead, the inputs used in the PSD modeling were used as inputs to Screen3 for each individual source. Noting that 1-hour impacts predicted by Screen3 may be converted to 5-minute, 3-hour, 24-hour, and annual impacts using factors of 1.6, 0.9, 0.4, and 0.08, respectively, as presented in "Screening Procedures for Estimating the Air Quality Impact from Stationary Sources", Revised (EPA-454/R-92-019), it is clear that a 1-hour result less than 325 µg/m<sup>3</sup> will automatically satisfy all of the other averaging standards. Input data taken from the PSD model and Screen3 results are shown below. The "New Boiler" identified in the sophisticated analysis is not evaluated here because it combusts commercial quality natural gas and has negligible SO<sub>2</sub> emissions. The sophisticated analysis performed separate runs using Secondary Carbonizer boiler exhaust and using the same parameters at 50% bypass, resulting in identical inputs except for SO<sub>2</sub>, which is reduced by half in the second scenario. It is not necessary to evaluate the smaller alternate scenario. Afterburner evaluations shown at both 100% bypass and 50% bypass of the waste heat boiler are each evaluated. Note that the 1-hour value for each point is well below the threshold of 325 µg/m<sup>3</sup>, assuring compliance with the standard for all averaging periods.

Source	Height (Feet)	Temperature (°F)	Diameter (Feet)	ACFM	SO <sub>2</sub> (Lb/hr)	1-hour µg/m <sup>3</sup>
Primary Carbonizer	70.25	524	2.90	11,779	29.91	61
Secondary Carbonizer	140	547	2.50	5,677	89.39	196
Activator Boiler	120	700	3.50	9,785	63.72	93
New Activator	120	700	7.00	20,280	195.5	174
Afterburner 100% Bypass	83.67	1,948	4.33	8,323	89.39	148
Afterburner 50% Bypass	83.67	1,944	4.33	6,746	44.70	88

Part 5 limits sulfur dioxide emissions from new fuel-burning equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb/MMBTU heat input averaged over 3 hours. The permit requires the use of natural gas as defined in Part 72 having 20.0 grains TRS/100 scf to ensure compliance with Subchapter 31.

The activation furnaces' and carbonizer kilns' afterburner exhaust gases pass through a heat recovery, steam generating, waste heat boiler, so the afterburners are considered to be fuel-burning equipment. The afterburner's main fuel is natural gas, which can meet the emission limit above based upon AP-42 emission calculations. This view was borne out in Memoranda associated with original construction of each carbonizer. A 1978 memo claimed that the regulation did not cover volatilization of the raw coal material and a 1994 memo claimed that sulfur compounds from coal processing are not subject. Although the exact circumstances surrounding these statements are unclear, they address the case where the afterburner acts as only a control device. In the instance where the combustion products from the afterburner are used to generate steam, these statements do not apply. Sufficient data to demonstrate compliance with the appropriate limits for the other afterburners is not available. Because the Air Quality Division (AQD) is in the process of reviewing and proposing significant changes to Subchapter 31, the permit will be issued without a final demonstration of compliance with the fuel-burning standards. However, the permit may be re-opened to address compliance with the final rule.

OAC 252:100-33 (Nitrogen Oxides) [Not Applicable]

This subchapter limits new fuel-burning equipment with rated heat input greater than or equal to 50 MMBTUH to specified emissions of NO<sub>x</sub> in lbs per MMBTU, three-hour average. There are no equipment items that exceed the 50 MMBTUH threshold.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]

This subchapter affects gray iron cupolas, blast furnaces, basic oxygen furnaces, petroleum catalytic cracking units, and petroleum catalytic reforming units. There are no affected sources.

OAC 252:100-37 (Volatile Organic Compounds) [Part 7 Applicable]

Part 3 requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. There are no tanks storing VOC that have capacity of 400 gallons or more.

Part 5 limits the organic solvent content of coating or other operations. This facility does not normally conduct coating or painting operations except for routine maintenance of the facility and equipment, which is not an affected operation.

Part 7 requires fuel-burning equipment to be operated and maintained so as to minimize emissions. Temperature and available air must be sufficient to provide essentially complete combustion.

OAC 252:100-40 (Friable Asbestos During Demolition and Renovation) [May Be Applicable]  
Any projects at the facility that involve asbestos removal are affected by this subchapter. Section 40-5 describes procedures for the proper handling of asbestos.

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Applicable]  
This subchapter regulates toxic air contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained, unless a modification is approved by the Director. Since no AOC has been designated there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]  
This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

**The following Oklahoma Air Pollution Control Rules are not applicable to this facility.**

OAC 252:100-10	General Operating Permits	not requested
OAC 252:100-11	Alternative Emissions Reduction	not requested
OAC 252:100-15	Mobile Sources	not in source category
OAC 252:100-21	PM from Wood Waste Burning	not type of emission unit
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain Elevators	not in source category
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Municipal Solid Waste Landfills	not in source category

## SECTION VI. FEDERAL REGULATIONS

PSD, 40 CFR Part 52

[Applicable]

Total emissions of NO<sub>x</sub> and SO<sub>2</sub> are greater than the threshold of 250 TPY of any single regulated pollutant, making it a major stationary source. Any future increases of emissions must be evaluated for PSD if they exceed a significance level.

NSPS, 40 CFR Part 60

[Subparts Dc and Y Applicable]

Subpart A, This subpart contains requirements for flares used to comply with applicable subparts of parts 60 and 61 that specifically refer to this subpart. Design and monitoring requirements are included, as well as general notification and reporting requirements. The various afterburners are not referenced in any subparts covering the facilities that they serve,

Subparts D, Da, and Db (Steam Generating Units) do not apply for various reasons. The waste heat boilers are not used to generate electricity and do not combust any fuel.

Subpart Dc (Small Industrial-Commercial-Institutional Steam Generating Units) applies to steam generating units constructed, modified, or reconstructed after June 9, 1989, and with maximum design heat input capacity greater than or equal to 10 MMBTUH and less than or equal to 100 MMBTUH. It does not apply to the waste heat boilers because they do not combust any fuel. The 24.5 MMBTUH boiler of EUG 20 is an affected facility and shall comply with SO<sub>2</sub> and particulate standards. This boiler uses only natural gas and is not subject to standards for either pollutant. Recordkeeping of daily fuel use is required by 40 CFR 60.48(g).

Subpart K, Ka, and Kb (VOL Storage Vessels). The 320 -gallon gasoline tank is not subject to any of these subparts because it is below the threshold capacity of each of these subparts.

Subpart Y (Coal Preparation Plants) affects thermal dryers, pneumatic coal cleaning equipment, coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems at coal processing plants with a capacity of 200 TPD or more and that commenced construction, reconstruction, or modification after October 24, 1974. All affected facilities are subject to an opacity limitation of 20% and the subpart prohibits discharge from any thermal dryer of gases with 0.031 gr/DSCF of PM or more. Pneumatic cleaning is not performed at this location. Performance testing has demonstrated compliance with all of these standards.

Subpart IIII (Stationary Compression Ignition Internal Combustion Engines {CI-ICE}) affects CI-ICE constructed, modified, or reconstructed after July 11, 2005. The emergency generator listed as an Insignificant Activity in Section IV went into operation prior to 1996, and is not an affected facility.

NESHAP, 40 CFR Part 61

[Not Applicable]

There are trace amounts of arsenic, beryllium, and mercury found in the raw coal, some of which is emitted to the atmosphere. Norit's process does not fall under the applicability determinations of Part 61 for any of these pollutants. . There are no emissions of asbestos, vinyl chloride, coke oven emissions, or radionuclides. Testing has shown the raw material to contain insufficient amounts of benzene to trigger applicability of either Subpart J or Subpart FF

Subpart J (Equipment Leaks of Benzene) concerns only process streams that contain more than 10% benzene by weight.

Subpart FF (Benzene Waste Operations) concerns operations at chemical manufacturing plants, coke by-product recovery plants, and petroleum refineries. This facility does not satisfy the definition of any of these activities, as described in 40 CFR 61.341.

NESHAP, 40 CFR Part 63

[Subpart ZZZZ Applicable]

Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). This subpart affects RICE at major and area sources of HAP emissions. According to 40 CFR 63.6590(a)(1)(iii), the emergency generator engine listed in Insignificant Activities is an affected source, but according to §6590(b)(3), this existing emergency stationary RICE does not have to meet the requirements of Subparts ZZZZ or A, nor is initial notification required.

Subpart DDDDD, (Industrial, Commercial and Institutional Boilers and Process Heaters) affects major sources of HAPs. This subpart was originally issued to cover both major and area sources, so it would have applied to the 24.5 MMBTUH boiler of EUG 20. EPA has published various actions regarding implementation of this rule as detailed following.

- September 13, 2004 EPA promulgated standards for major sources
- June 19, 2007 US Court of Appeals for the District of Columbia vacated and remanded the standards
- March 21, 2011 EPA promulgated new standards, dividing the subpart into DDDDD for major sources and JJJJJ for area sources
- May 18, 2011 EPA published notice of delay of the effective dates until judicial review or EPA reconsideration is completed, whichever is earlier

Section 112(j) of the Clean Air Act addresses situations where EPA has failed to promulgate a standard as required under 112(e) (1) and (3). Section 112(j) requires case-by-case MACT determination applications to be submitted to the permitting authority within specified time frames. Because 112(j) appears to address only situations where EPA has failed to promulgate standards and not situations in which complete rules are subsequently vacated, confusion existed as to the requirements for these sources. On March 30, 2010, EPA proposed a rule to amend 112(j) to clarify what applies under 112(j). In the proposed rule, EPA clarifies that the intent was that vacated sources should be treated similarly to sources where EPA has failed to promulgate a standard. The rule, as proposed, will require case-by-case MACT applications to be submitted to the permitting authority within 90 days after promulgation of the amendments or by the date on which the source's permitting authority requests such application. Final action on the amendment is scheduled for the fall of 2011. Compliance with Subpart JJJJJ will be determined based on the requirements of the amended 112(j).

CAM, 40 CFR Part 64

[Not Applicable]

This part applies to any pollutant-specific emissions unit at a major source that is required to obtain an operating permit, for any application for an initial operating permit submitted after April 20, 1998, that addresses "large pollutant-specific emissions units," or any application that addresses "large pollutant-specific emissions units" as a significant modification to an operating permit, or for any application for renewal of an operating permit, if it meets all of the following criteria.

- It is subject to an emission limit or standard for an applicable regulated air pollutant
- It uses a control device to achieve compliance with the applicable emission limit or standard
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of 100 TPY

The primary carbonizer, secondary carbonizer, east activation furnace, west activation furnace, and the regeneration furnace use afterburners to control emissions of VOC and toxic compounds. However, emissions after control are below 100 TPY for these pollutants and these specific processes are not potentially subject to the CAM rule until the renewal Title V permitting date. PM controls added per the Consent Order will require a CAM applicability review during renewal Title V permitting.

The coal handling facilities, coal dryer, regeneration kiln and acid wash facilities utilize baghouses and fabric filters to control emissions of PM. However, emissions after control are below 100 TPY for these pollutants and these specific processes are not subject to the CAM rule until the renewal Title V permitting date.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]  
This facility does not process or store more than the threshold quantity of any regulated substance (Section 112r of the Clean Air Act 1990 Amendments).

Stratospheric Ozone Protection, 40 CFR Part 82 [Subparts B and F Applicable]  
These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations that meet phase out requirements and that maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).

The facility performs service on motor (fleet) vehicles which involve ozone-depleting substances. Therefore, this facility is subject to these requirements and the permit requires compliance with Part 82 per Standard Condition XX.B.

## **SECTION VII. COMPLIANCE**

### **Inspection**

This facility has been visited numerous times. The current modifications to the permit are not physical modifications to equipment, do not alter the method of operation, and do not result in increased emissions. No further inspection is necessary.

### **Tier Classification and Public Review**

This application has been determined to be a Tier II based on the request for a significant modification to an operating permit for a major source. Notice of Application for a significant modification to a Title V operating permit was published in the Pryor Daily Times on April 13, 2012. A copy of the application was available at the Pryor Public Library, 505 E. Graham Ave, 74361, and at the AQD office in Oklahoma City. A notice of availability of the draft permit was published in the Pryor Daily Times on April 13, 2012. A copy of the Draft was made available at

the Pryor Public Library, as above, at the AQD office in Oklahoma City, and on the DEQ website, <http://www.deq.state.ok.us/>. This facility is located within 50 miles of Oklahoma borders with Kansas, Missouri, and Arkansas. Notice of the draft permit was provided to each of these states. The only comments received were those from the facility. These are fairly extensive and are addressed in Section VIII below.

The permittee has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant owns the land.

### **Fees Paid**

Title V operating permit significant modification fee of \$3,000.

## **SECTION VIII. COMMENTS**

The only comments received during the public comment period were from the facility. Most comments were received in an electronic version of the draft document, and are related to the specific statements following or are minor language changes to clarify the meaning or significance of otherwise potentially ambiguous terms in both the Memorandum and Specific Conditions. Specific comments in the cover letter are duplicated verbatim following, numbered for convenience. DEQ responses follow each comment.

**Comment 1:** EUG 9. The new pressure drop operating range for the coal dryer baghouse (EUG 9) needs to be 0" to 9" WC on a 12-hour rolling average, not to exceed 10" WC on a 1-hour rolling average. Due to the low air-to-cloth ratio, the baghouse cannot operate consistently above 1" WC without modifications. The manufacturer has specifically recommended not making any changes to the equipment. A copy of the letter from the manufacturer is included for your convenience.

**Response 1:** Agreed.

**Comment 2:** Record keeping requirements. The record keeping specified in Specific Condition 14 (c) and (f) requires that the coal dryer exit temperature and all plant afterburner temperatures be recorded continuously, or at least once every 15 seconds. Norit proposes to include language that states "with a minimum of 95% data retention." The new language does not relax the monitoring frequency, but allows for occasional disruptions of the data recording due to electronic abnormalities without incurring a permit deviation. In the case of the afterburners, there is no identifiable environmental standard that necessitates the high recording frequency. Further the 3-hour rolling temperature average will be the compliance parameter. The proposal is not otherwise in conflict with the continuous monitoring requirements for dryers (§60.256).

**Response 2:** Denied. All data shall be retained, per OAC 252:100-9. Subchapter 9 allows explanations of "electronic abnormalities."

**Comment 3:** EUG 6. Supplemental gas lines have been added to each of the activator afterburners. The lines are rated at 12 MBTUH each. There is no emission increase associated with this change.

**Response 3:** Agreed. However, DEQ notes that the supplemental lines are listed at 12 MMBTUH in the marked-up version of the Memorandum.

**Comment 4:** EUG 12. Norit periodically transfers product between mobile equipment (i.e., from pneumatic tankers to rail cars). The exhaust air is filtered through a portable Dacron filter sock at ground level. This material handling operation has been occurring since 2006 but has not been described in previous application or modifications. Average and maximum particulate emissions are estimated to be 0.15 TPY and 0.29 TPY, respectively (see attached calculations). This is an insignificant activity (<5 TPY), but should be listed under EUG 12.

**Response 4:** Agreed.

**Comment 5:** EUG 13. Norit periodically transfers product from bulk bags (1,000 lbs/bag) into tankers for shipment to customers. This activity occurs at the 604 Warehouse by means of a mobile hopper with an enclosed belt conveyor and chute that extends into the tanker. The bulking operation has been occurring since at least 1987, but has not been accounted for in previous permits or applications. Using AP-42 equations, the particulate emissions are estimated to be 0.002 TPY. This is an insignificant activity (<5 TPY), but should be listed under EUG 13. Emissions calculations are attached.

**Response 5:** Agreed.

**Comment 6:** Trivial Activities. Norit has an emergency firewater pump powered by a Detroit diesel engine brand 3-71, model 1034-7110. The engine is on a skid with a Gorman-Rupp centrifugal pump and power take-off model PTA1SD273. The unit has been in service since the plant began operations in 1979. The engine is rated at 109 hp and is tested/operated less than 500 hours per year. The fuel supply for the engine is a 125 gallon tank. All equipment is located inside fire water supply building near the main plant entrance. These sources qualify as insignificant activities (Appendix I) and should be describe in the permit. The diesel engine is also subject to the RICE MACT standards, to which Norit will ensure that the unit is in compliance.

**Response 6:** Agreed; although not clear why this comment is identified as trivial.

The proposed permit was sent to EPA for review. No comments were received from EPA.

## SECTION IX. SUMMARY

This facility was constructed as described in the application. There are no active Air Quality compliance or enforcement issues. Issuance of the operating permit is recommended.

**PERMIT TO OPERATE  
AIR POLLUTION CONTROL FACILITY  
SPECIFIC CONDITIONS**

**NORIT Americas, Inc.  
Pryor Activated Carbon Facility**

**Permit Number 98-171-TV (M-5)**

The permittee is authorized to operate in conformity with the specifications submitted to Air Quality on December 29, 2011. The Evaluation Memorandum dated December 31, 2012, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Continuing operations under this permit constitutes acceptance of, and consent to, the conditions contained herein. All particulate matter (PM) emission limits are total PM, that is, filterable and condensable, or front-half and back-half, unless otherwise specifically indicated.

1. Points of emissions and limitations for each point. [OAC 252:100-8-6(a)(1)]

**EUG 1 Facility-wide**

This emission unit group is facility-wide. It includes all emission units and is established to discuss the applicability of those rules or compliance demonstrations that may affect all sources within the facility.

**EUG 2 Primary Carbonizer, Afterburner, and Waste Heat Boiler**

EU	Point ID	Name/Model	Const. Date
17	SV-VP-005	Primary Carbonizer	1990

Emissions of NO<sub>x</sub> and CO were authorized by Permit No. 88-105-O, while authorized emissions of particulate matter, treated as PM<sub>10</sub>, and sulfur oxides, treated as SO<sub>2</sub>, derive from the Consent Order mentioned above. Note that the SO<sub>2</sub> amount is shared among the primary carbonizer, secondary carbonizer, and the multiple hearth furnaces (activators), also identified as EU 17 (EUG 2), EU 12 (EUG 3), EU 10 and EU 11 (Both in EUG 6).

Pollutant	NO <sub>x</sub>	CO	PM <sub>10</sub>	SO <sub>2</sub>
Lb/hr	11.3	1.07	N/A	N/A
TPY	49.3	4.67	204	1,658

- a. The permittee is authorized to operate the primary carbonizer at a maximum raw material weight rate of nine tons per hour. [88-105-O]
- b. The primary carbonizer afterburner shall be operated: [88-105-O]
- (1) at a temperature of not less than 1,650°F (three-hour average);
  - (2) with residence time of the stack gases in the afterburners at least 2 seconds;
  - (3) with annual calibration of temperature monitoring device;
  - (4) with annual burner inspection;
  - (5) continuously with the carbonizers; and

- (6) using only natural gas as defined in Part 72 having 20.0 grains/100 scf or less total sulfur.  
 c. Recordkeeping requirements are listed in SC #14. [OAC 252:100-8-6 (a)(3)(B)]

### EUG 3 Secondary Carbonizer, Cyclone, Afterburner, and Waste Heat Boiler

EU	Point ID	Name/Model	Const. Date
12	SV-VP-007a,b	Secondary Carbonizer	1979/2006*

\*Multiclones added 11/2006

Authorized emissions of all pollutants derive from the Consent Order mentioned above. Note that the SO<sub>2</sub> amount is shared among the primary carbonizer, secondary carbonizer, and the multiple hearth furnaces (activators), also identified as EU 17 (EUG 2), EU 12 (EUG 3), EU 10 and EU 11 (Both in EUG 6).

Pollutant	NO <sub>x</sub>	CO	PM <sub>10</sub>	SO <sub>2</sub>
TPY	103	12.7	135	1,658

- a. The secondary carbonizer afterburner shall be operated: [Consent Order]
  - 1) at a temperature of not less than 1,650°F (rolling three-hour average), with the inlet thermocouple used as the compliance monitoring point from the first introduction of solid feed into the carbonizer until the outlet thermocouple temperature reaches 1,650° or one hour, whichever comes first, and the outlet used as the compliance monitoring point thereafter;
  - 2) with annual calibration of temperature monitoring device;
  - 3) with annual burner inspection;
  - 4) continuously with the carbonizer; and
  - 5) using only natural gas as defined in Part 72 having 20.0 grains/100 scf or less total sulfur.
- b. The cyclone(s) shall be operated continuously whenever the waste heat boiler is being operated. The waste heat boiler and cyclone(s) may be bypassed. [Consent Order]
- c. The cyclones shall have external visual inspections to assure mechanical integrity and to identify any leaks (weekly).
- d. Recordkeeping requirements are listed in SC #14. [OAC 252:100-8-6 (a)(3)(B)]

### EUG 4 Primary Carbonizer Heating Jacket

EU	Point ID	Name/Model	Const. Date
21	SV-VP-006	Primary Carbonizer Heating Jacket	1990

Emissions authorized by Permit No. 88-105-O for EU 21 were based on AP-42 factors and no authorized emissions were published for EU 21. This Part 70 does not set emission limits, but the equipment shall remain as it is and emissions shall be calculated using the most current AP-42 factors.

- a. All fuel burning equipment shall only be fueled with pipeline quality natural gas. [88-105-O]
- b. Recordkeeping requirements are listed in SC #14. [OAC 252:100-8-6 (a)(3)(B)]

**EUG 5 Secondary Carbonizer Heating Jacket**

EU	Point ID	Name/Model	Const. Date
22	SV-VP-008	Secondary Carbonizer Heating Jacket	1979

Emissions authorized by Permit No. 88-105-O for EU 22 were based on AP-42 factors and no authorized emissions were published for EU 22. This Part 70 permit does not set emission limits, but the equipment shall remain as it is and emissions shall be calculated using the most current AP-42 factors.

- b. All fuel burning equipment shall only be fueled with pipeline quality natural gas.[88-105-O]
- c. Recordkeeping requirements are listed in SC #14. [OAC 252:100-8-6 (a)(3)(B)]

**EUG 6 Multiple Hearth Activation Furnaces (Area 30)**

EU	Point ID	Name/Model	Const. Date
10	SV-VP-009a, b	Activation Furnace – East	1979
11	SV-VP-010a, b	Activation Furnace – West	1979

Each furnace has a dedicated cyclone and afterburner, but they share a common exhaust. There are two stacks, one of which is identified as “new.”

Authorized emissions of all pollutants derive from the Consent Order mentioned above. Note that the SO<sub>2</sub> amount is shared among the primary carbonizer, secondary carbonizer, and the multiple hearth furnaces (activators), also identified as EU 17 (EUG 2), EU 12 (EUG 3), EU 10 and EU 11 (Both in EUG 6).

**Authorized Emissions (TPY)**

Unit Identity	NO <sub>x</sub>	CO	PM <sub>10</sub>	SO <sub>2</sub>
Activator Stack	135	13.3	66.0	1,658
New Activator Stack	414	22.4	198	

- a. The east and west activation furnaces’ afterburners shall be operated as follows.
  - 1) Natural gas (NG) shall be used during startup to bring the afterburner to a sustained temperature of at least 850°F before initiating material flow.
  - 2) After the afterburners become self-sustaining (no longer requiring NG), they shall be maintained at a temperature of not less than 1,650°F (three-hour average).
  - 3) Emissions of volatile organic carbon (VOC) during startup shall be calculated using the equation  $VOC (lbs) = 0.95 \times (\text{feed rate in lbs/min}) \times (\text{volatile matter content as a decimal}) \times (t - 14.2\{\ln t + 14.2\}_0^1)$ , where t is in minutes, starting at initial material flow. The final value of t is determined by the time at which the afterburner temperature equals 1,650.
  - 4) Emissions of carbon monoxide (CO) during startup shall be calculated using the equation  $VOC (lbs) = 0 + 38 + 2.81 \times (t - 87)$ , where t is in minutes, starting at initial material flow. The final value of t is determined by the time at which the afterburner temperature equals 1,650. The first term reflects the fact that there is no measurable flow of CO for the first 60 minutes. The second term reflects the rapid linear increase of CO flow over

the next 27 minutes. The third term reflects the constant rate of 1,200 ppm of CO at maximum design flow of the exhausts.

- 5) Startup is defined as the three-hour period following initial flow of material. Any emissions following three hours and before 1,650°F is reached shall be treated as excess emissions and reported per OAC 252:100-9.
- 6) Annual calibration of temperature monitoring device
- 7) Annual burner inspection
- 8) Operated continuously with the carbonizers
- 9) The afterburners shall be fueled during startup only with pipeline quality natural gas.
- b. The activation furnace heaters shall only be fueled with pipeline quality natural gas.
- c. The cyclones shall have external visual inspections to assure mechanical integrity and to identify any leaks (weekly).
- d. Recordkeeping requirements are listed in SC #14. [OAC 252:100-8-6 (a)(3)(B)]

#### EUG 7 Acid Wash Plant Dryer

EU	Point ID	Name/Model	Const. Date
23	SV-VP-015	Acid Wash Plant Dryer	1989

Emissions authorized by Permit No. 88-050-O (M-1) for EU 23 follow, updated to reflect current AP-42 factors for NO<sub>x</sub>, CO, and VOC.

Pollutant	NO <sub>x</sub>	CO	VOC	PM <sub>10</sub>	SO <sub>2</sub>	HCl
Lb/hr	0.59	0.50	0.03	1.59	0.01	4.09
TPY	2.58	2.16	0.14	3.48	0.02	9.38

- a. The permittee is authorized to operate the Acid Wash Plant not to exceed production of 15,000,000 pounds per year of activated carbon. [88-050-O (M-1)]
- b. All air discharges from the dryer, bagging operation, screening operation, and associated conveying equipment shall be processed by a baghouse or an equivalent PM emissions control device with a design efficiency of 98% or more. [88-050-O (M-1)]
- c. The permittee shall maintain accessible monitoring equipment to verify that the pressure drop across the baghouse is within the range of 1" to 9" WC, 12-hour rolling average. Each one-hour rolling average of 10" or greater is an excess emission. [98-171-TV (M-5)]
- d. The dryer shall be fired only with natural gas having 4 ppm or less sulfur. [88-050-O (M-1)]
- e. Recordkeeping requirements are listed in SC #14. [OAC 252:100-8-6 (a)(3)(B)]

#### EUG 8 Material Handling & Transfer – Controlled

EU	Point ID	Description	Throughput
24	SV-VP-004	Transfer of coal From Area 20 to surge bin	10 TPH

**EUG 9 Coal Processing Plant (Area 20)**

Emissions from the Bowl Mill, Compactor, Crusher, Screener and Double Roll Crusher are processed by a single baghouse. Emissions from the coal dryer are processed by a separate baghouse.

EU	Point ID	Name/Model	Const. Date
8	SV-VP-002	Coal Preparation Plant Dryer	1994
9	SV-VP-003	Coal Preparation Bowl Mill	1994
9	SV-VP-003	Coal Preparation Compactor w/Crusher and Screener	1994
9	SV-VP-003	Coal Preparation Double Roll Crusher	1994

Particulate emissions authorized by Permit No. 93-025-O are as follow.

EU #	Equipment	Emissions	
		Lb/hr	TPY
8	Dryer	0.22	0.96
9	Preparation equipment	4.91	21.49

a. The permittee shall comply with the Standards of Performance for Coal Preparation Plants, NSPS Subpart Y, for each thermal dryer, coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems in the Coal Preparation Plant. [40 CFR 60.250 *et seq*]

1) The owner or operator shall not cause to be discharged into the atmosphere from the thermal dryer gases which contain particulate matter in excess of 0.070 g/dscm (0.031 gr/dscf), or exhibit 20 percent opacity or greater. [§ 60.252(a)(1) & (2)]

2) The owner or operator shall not cause to be discharged into the atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal, gases which exhibit 20 percent opacity or greater. [§ 60.252(c)]

3) Performance testing and continuing compliance shall follow the methods described in the subpart. [§ 60.255]

4) The owner or operator shall install, calibrate, maintain, and continuously operate a monitoring device on the thermal dryer for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device is to be certified by the manufacturer to be accurate within  $\pm 3^{\circ}$  Fahrenheit and shall be replaced or recalibrated annually in accordance with procedures under §60.13(b). [§ 60.256]

b. Raw coal input shall not exceed 240 tons per day (TPD), monthly average. [93-025-O (M-1)]

c. The coal dryer shall be heated only with steam or other indirect heating such that no fuel-burning equipment becomes part of the unit. [93-025-O (M-1)]

d. All air discharges from the coal drying, milling, crushing, and screening operations shall be processed by a baghouse or an equivalent PM emissions control device with a design efficiency of 99% or more. [93-025-O (M-1)]

e. The permittee shall maintain accessible monitoring equipment to verify that the pressure drop across the Area 20 is within the range of 1" to 9" WC, and the coal dryer baghouse is within the range of 0" to 9" WC, 12-hour rolling average. Each one-hour rolling average of 10" or greater is an excess emission. [98-171-TV (M-5)]

- f. Recordkeeping requirements are listed in Specific Condition (SC) #14.  
[OAC 252:100-8-6 (a)(3)(B)]

### EUG 10 Material Handling, Transfer, Traffic, & Erosion – Uncontrolled

Note that subbituminous is truncated to “subbit” for this table.

EU	Point ID	Description	Throughput
1a	VP10-SUB-01	Subbit coal railcar unloading into hopper	20 TPH
1d	VP10-SUB-02	Subbit coal drop to elevator from unloading hopper	20 TPH
1e	VP10-SUB-03	Subbit coal drop from elevator to working subbit coal storage pile adjacent to unloading building	20 TPH
4	VP10-SUB-05	Front end loader drop into subbit coal storage pile in open storage area or in dry coal storage building	20 TPH
7	VP10-SUB-10	Front end loader drop of subbit coal into subbit coal loading hopper	20 TPH
2	VP10-PIT-01	Pitch railcar unloading into hopper	20 TPH
3	VP10-PIT-02	Pitch drop onto elevator from unloading hopper	20 TPH
1o	VP10-BIT-03	Bituminous coal unloading from truck into bituminous unloading pile	200TPH
1	VP10-BIT-05	Front end loader drop of bituminous coal into coal storage area or dry coal storage building	200 TPH
7	VP10-BIT-09	Front end loader drop of bituminous coal into Load Hopper	20 TPH
1	VP10-REC-03	Front end loader drop of Reclaim coal into truck	120 TPH
1	VP10-REC-05	Front end loader drop of Reclaim coal into Load Hopper	20 TPH
28	VP40-PACLD	PAC Bulk loading station into trucks	20 TPH
NA	SV-REGN-004	Truck unloading onto SAC storage pad	40 TPH
NA	REGN-SKUL	Regen F Hopper loading	3 TPH

### EUG 11 Acid Wash Plant Material Handling & Transfer – Controlled

EU	Point ID	Description	Throughput
23	SV-VP-015	Acid wash dryer drop to product screener	1.5TPH
23	SV-VP-015	Acid wash screener drop to product bin	1.5TPH
23	SV-VP-015	Acid wash plant product packaging	1.5TPH

### EUG 12 Material Handling & Transfer – Controlled

EU	Point ID	Description	Throughput
3	SV-VP-001	Pitch drop from elevator onto pitch building distribution conveyor belt	35 TPH
3	SV-VP-003	Pitch drop into Pitch feed Bin	20 TPH
13	SV-VP-012	Activated carbon from activated furnaces transfer into product screener and screening	4 TPH
13	SV-VP-012	Fines transfer from product screener to fines bin	4 TPH
13	SV-VP-012	Fines transfer from product screener to oversize bin	4 TPH
20	SV-VP-013	Transfer activated carbon from fines bin into PAC mill	4 TPH

EU	Point ID	Description	Throughput
13	SV-VP-012	PAC mill to packaging	4 TPH
13	SV-VP-012	Product screener transfer into packages	4 TPH
9	SV-VP-003	Activated carbon transfer into acid wash feed hopper	4 TPH
NA	Mobile Equipment	Pneumatic transfer of product from tanker to rail car	8 TPH

**EUG 13 Material Handling, Transfer, Traffic, & Erosion – Uncontrolled**

EU	Point ID	Description	Throughput
4	VP10-SUB-04	Front end loader transfer from working storage to open subbituminous storage or dry coal storage building	20 TPH
5	VP10-SUB-06	Front end loader maintenance of subbituminous open coal storage area or dry coal storage area or dry coal storage building including transfer between open and dry coal storage building and to subbituminous coal loading hopper	20 TPH
4	VP10-SUB-07	Wind erosion of subbituminous coal working storage pile	
6	VP10-SUB-08	Wind erosion of subbituminous coal storage pile	
6	VP10-SUB-09	Wind erosion of subbituminous coal storage pile in dry coal storage building	
3	VP10-PIT-06	Front end loader maintenance of pitch and transport to load hopper	20 TPH
1m	VP10-BIT-01	Travel by truck carrying bituminous coal on unpaved road (Loaded)	
7	VP10-BIT-02	Travel by truck carrying bituminous coal on unpaved road (Empty)	
5	VP10-BIT-04	Movement of bituminous coal from unloading area to coal storage area or dry coal storage building by front end loader	20 TPH
5	VP10-BIT-06	Maintenance of bituminous coal storage pile by front end loader and transfer to loading hopper	20 TPH
6	VP10-BIT-07	Wind erosion of bituminous coal in open coal storage area	
6	VP10-BIT-08	Wind erosion of bituminous coal in dry coal storage building	
5	VP10-REC-01	Loaded reclaim coal truck travel on unpaved roads	
5	VP10-REC-02	Empty reclaim coal truck travel on unpaved roads	
5	VP10-REC-04	Reclaim coal pile maintenance by loader, transfer to loading hopper	
6	VP10-REC-06	Wind erosion of reclaim coal pile	
NA	SV-VP-004	Wind erosion of SAC pile	
NA	Mobile Equipment	Transfer of bulk bag product to tanker via mobile belt conveyor	14 TPH

**EUG 14 Truck Unloading**

EU	Point ID	Description
NA	SV-REGN-001	Truck loading into storage silos and transfer from storage to feed silo
NA	SV-REGN-002	Truck unloading into auxiliary silo and neutralization
NA	SV-REGN-003	Truck unloading into auxiliary silo and neutralization

**EUG 15 Regeneration Kiln/Afterburner**

Emissions authorized for this EUG by Permit No. 90-006-O (M-3) follow.

Pollutant	NO <sub>x</sub>	CO	VOC	PM <sub>10</sub>	SO <sub>2</sub>	HCl
Lb/hr	1.97	2.68	0.40	1.0	4.88	4.08
TPY	8.62	11.7	1.75	4.38	21.4	17.9

- a. The permittee shall be authorized to operate the regenerator kiln up to an annual production of 29,190,000 pounds per year (dry-basis) of activated carbon. [90-006-O (M-3)]
- b. All air discharges from the spent carbon receiving and product recovery operations shall be processed by a baghouse or an equivalent PM emissions control device with a design control efficiency of 99% or more. [90-006-O (M-3)]
- c. All air discharges from the rotary kiln shall be processed through: [90-006-O (M-3)]
  - 1) a baghouse or an equivalent PM emissions control device with an design control efficiency of 99% or more;
  - 2) an afterburner with a VOC design control efficiency of at least 99.99%;
  - 3) and an acid gas scrubber with a design control efficiency of at least 99% for HCl emissions control and 90% for SO<sub>2</sub> emissions control.
  - 4) i) The permittee shall maintain accessible monitoring equipment to verify that the pressure drop across the process offgas baghouse is within the range of 1" to 9" WC, 12-hour rolling average.
  - ii) Each one-hour rolling average of 10" or greater is a violation. [98-171-TV (M-5)]
- d. The wet scrubber shall be operated: [90-006-O (M-3)]
  - 1) using liquid with a pH of 6.0 or greater, calculated on a 1-hour rolling average;
  - 2) with liquid supplied to the wet scrubber at a rate of at least 3 GPM, calculated on a 1-hour rolling average; and
  - 3) with nozzle pressure of at least 20 psig, calculated on a 1-hour rolling average.
- e. Afterburner requirements follow. [90-006-O (M-4)]
  - 1) The afterburner shall be operated at a temperature not less than 1,600°F, three-hour average.
  - 2) Design of the afterburner shall provide a residence time of at least two seconds for stack gases.
  - 3) The temperature monitoring device shall be calibrated and the burner shall be inspected no less frequently than annually.
  - 4) The regeneration kiln shall not be operated unless the afterburner is functioning properly.
  - 5) Only pipeline quality natural gas with sulfur content less than or equal to 4 ppm shall be used as pilot fuel for the afterburner.
  - 6) If the regeneration kiln handles chlorinated organic waste material, the afterburner shall be operated at a temperature not less than 1,775°F, 24-hour rolling average. Chlorinated organic waste, as used here, means any material listed in 40 CFR 261.24 that is present in the material to be regenerated in concentrations equal to or greater than the "regulatory level" shown in §261.24.
- f. The facility shall maintain records of all waste stream profiles, sufficient to demonstrate the presence of any chlorinated organic waste in each, along with records sufficient to demonstrate when each such stream was processed through the regeneration kiln and afterburner. [90-006-O (M-3)]
- g. The permittee shall conduct weekly visual observations of the opacity from the exhausts associated with these emission units using EPA Reference Method 22 and keep a record of

these observations. If visible emissions are detected, then the permittee shall conduct a thirty-minute opacity reading in accordance with EPA Reference Method No. 9. [90-006-O (M-3)]

h. Recordkeeping requirements are listed in SC #14. [OAC 252:100-8-6 (a)(3)(B)]

### EUG 16 Regenerator Plant Material Handling

Permit No. 90-006-O (M-3) authorizes silo vent particulate emissions of 4.80 lbs/hr and 1.15 TPY. It also requires that any replacement of the existing baghouse have at least 99% capture design efficiency.

EU	Point	Description	Throughput
19	SV-REGN-003	Packaging area material handling	2
NA	SV-REGN-004	Regeneration product collector	2
NA	REGN-TRKLD	Regen bulk truck loading (drop into top of trucks at facility on northwest side of regeneration plant)	20

### EUG 17 Regenerator Plant Bulk Handling

Permit No. 90-006-O (M-3) authorizes product handling particulate emissions of 1.46 lbs/hr and 6.57 TPY. It also requires that any replacement of the existing baghouse have at least 99% capture efficiency.

EU	Point ID	Description
27	REGN-PACLD	Regeneration plant PAC mill bulk truck loadout

### EUG 18 Hydrochloric acid Storage Tank

EU	Point ID	Description	Const. Date
15	SV-VP-016	Storage tank	Unknown

### EUG 19 NSPS Subpart Dc Boiler (Permit No. 98-171-C (M-1))

EU	Point	Description	Const. Date
19	SV-VP-019	24.5 MMBTUH Cleaver-Brooks CBLE600	1/18/2008

### EUG 20 Cooling Tower

The cooling tower is estimated to emit 0.02 lbs/hr of particulate. The applicable limit according to Appendix G is 74 lbs/hr. All particulates are assumed to be PM<sub>10</sub>.

EU	Point	Description
20	SV-VP-020	Cooling Tower

2. The permittee shall be authorized to operate this facility continuously (24 hours per day, every day of the year). [OAC 252:100-8-6(a)]

3. The fuel-burning equipment shall use pipeline-grade natural gas. [OAC 252:100-31]
4. Each emission unit at the facility shall have a permanent identification plate attached which shows the make, model number, and serial number, as applicable. [OAC 252:100-43]
5. The permittee shall keep operation and maintenance (O&M) records for all emission units which have not been modified. Such records shall at a minimum include the dates of operation, and maintenance, type of work performed, and the increase, if any, in emissions as a result.  
[OAC 252:100-8-6 (a)(3)(B)]
6. Performance testing for various pollutants shall be performed at certain vents to atmosphere no less frequently than every five years. Vents subject to testing include the primary carbonizer, the secondary carbonizer, and the activation hearths. Testing shall occur downstream from all control devices. Pollutants to be tested include oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), oxides of sulfur (SO<sub>x</sub>), volatile organic compounds (VOC), and particulate matter (PM). PM testing shall address those aerodynamic diameters for which standards have been set, such as PM<sub>10</sub> and PM<sub>2.5</sub>. PM testing shall include both filterable (front half) and condensable (back half) emissions. Testing shall be performed in a timely manner so that results will be supplied to DEQ in subsequent applications for Title V renewal. In the event that continuous emissions monitoring (CEMs) equipment is installed on any vent, RATA testing of the CEMs shall demonstrate compliance with this Condition.  
[OAC 252:100-8-6 (a)(3)(A)]
7. When periodic compliance testing shows emissions in excess of the lb/hr emission limits in Specific Condition Number 1, the permittee shall comply with the provisions of OAC 252:100-9 for excess emissions. Requirements of OAC 252:100-9 include immediate notification and written notification of Air Quality and demonstrations that the excess emissions meet the criteria specified in OAC 252:100-9.  
[OAC 252:100-9]
8. The permittee shall conduct weekly visual observations of the opacity from eight controlled emission points in the facility using EPA Reference Method (RM) 22, and keep a record of these observations. The emission points include the afterburners and various operations with potential for particulate emissions. The points are identified as Sequence Numbers 2, 3, 6, 11, 12, 14, 15, and 16 on the 2009 annual emission inventory. The points are described in various ways, depending on the source document, so only sequence numbers are used here. If visible emissions are detected, then the permittee shall make whatever equipment adjustments are necessary and conduct a follow-up RM 22 opacity reading within 24 hours. If the second RM 22 shows visible emissions, RM 9 testing shall follow as soon as technically possible.[OAC 252:100-43]
9. The 24.5 MMBTU boiler of EUG 19 is an affected facility under 40 CFR 60, Subpart Dc, and is subject to the following requirements. [98-171-C (M-1), 40 CFR 60.60c *et seq*]
  - a) Consumption of natural gas not to exceed 214,620 MMBTUs per rolling 12-month total.
  - b) Records of amount of fuel combusted. (daily, monthly and 12-month rolling total).
10. Emissions of SO<sub>2</sub> from the VAC shall be calculated based on material balance for the entire process. The sulfur content of the raw material (feed) is known or measurable, as is the sulfur content of the product. The difference in total sulfur between feed and product shall be considered to have been converted to sulfur dioxide stoichiometrically and emitted. The

permittee may assign portions of the total to each of the primary carbonizer, secondary carbonizer, and activator hearths, based on reasonable assumptions about sulfur lost in each. Product shall be tested for sulfur content to determine both the amount of sulfur present and the ratio of sulfur in the product to sulfur in the feed. Bituminous and subbituminous coals shall be tested at least twice each during each calendar year, with no test for each type of feed occurring sooner than 120 days after the preceding test. For the first year after this permit is issued, the permittee may assume the ratio to be 90%. If four consecutive tests of either type of feed show that 90% results in conservatively high emissions, the permittee may discontinue testing and simply use 90% for that type. If testing shows ratios less than 90%, actual ratios shall be used in subsequent years. If testing shows consistent ratios, permittee may request discontinuance of testing. Because test data and emission calculations may reveal proprietary information relative to the process, only the results shall be necessary for emission inventory purposes. However, all confidential data and supporting assumptions and calculations shall be made available to DEQ for inspections and as otherwise required. [OAC 252:100-43]

11. Emissions of particulate matter (PM) from the VAC shall be calculated as  $PM_{10}$  or  $PM_{2.5}$  based on material balance for the entire process. The method is more complicated than that laid out in SC #10 for  $SO_2$  in that a combustible solid is being processed. Certain portions of the material may be oxidized and be emitted as a gas, while other portions have been oxidized and are fully capable of being emitted as PM. The permittee shall provide an analysis demonstrating the calculation of emissions, showing the ash content at various stages of the VAC process and explaining each calculation. Because test data and emission calculations may reveal proprietary information relative to the process, only the results shall be necessary for emission inventory purposes. However, all confidential data and supporting assumptions and calculations shall be made available to DEQ for inspections and as otherwise required. [OAC 252:100-43]

12. Stack testing shall be performed on each of the waste heat boiler stacks; namely, those associated with the primary carbonizer, secondary carbonizer, and activator furnace. Reference Method sulfur dioxide testing shall be performed under representative operating conditions and data describing the heat content of the waste gas consumed shall be recorded during each test. The stacks shall be tested simultaneously, with the results of all testing supplied to DEQ no later than two years after issuance of this permit. Appropriate protocols for all testing shall be provided to DEQ at least 30 days before testing is performed. [OAC 252:100-43]

13. The following records shall be maintained on site to verify Insignificant Activities. No recordkeeping is required for those operations that qualify as Trivial Activities.

[OAC 252:100-8-6 (a)(3)(B)]

- a) For stationary reciprocating engines used exclusively for emergency power generation or for peaking power service, records of the size of engines, type of fuel used, and number of hours operated (annual).
- b) For fuel storage/dispensing equipment operated solely for facility owned vehicles, records of the type and amount of fuel dispensed (annual).
- c) For fluid storage tanks with a capacity of less than 39,894 gallons and a true vapor pressure less than 1.5 psia, records of the capacity of the tanks and the contents.

d) For activities (except for trivial activities) that have the potential to emit less than 5 TPY (actual) of any criteria pollutant, the type of activity and the amount of emissions or a surrogate measure of the activity (annual).

14. The permittee shall maintain records of operations as listed below. These records shall be maintained on site or at a local field office for at least five years after the date of recording and shall be provided to regulatory personnel upon request. [OAC 252:100-8-6 (a)(3)(B)]

- a) Natural gas usage for each combustion unit – EUGs 2, 3, 4, 5, 6, 7 & 15 (monthly and 12-month rolling total)
- b) Feed coal characterization – EUG 9 (each change of supply)
- c) Thermal dryer outlet temperature – EUG 9 (at least once each 15 seconds)
- d) Process weight rates and hours of operation for each carbonizer – EUGs 2 & 3 (daily). The process weight rates for the secondary carbonizer can be estimated based on expected yields from the primary carbonizer.
- e) Sulfur content of the coal being processed – EUGs 2 & 3 (each change of input)
- f) Temperature of the afterburners during operation – EUGs 2, 3, 6, & 15 (at least once each 15 seconds).
- g) Activated carbon production – EUGs 6, 7 & 15 (monthly and 12-month rolling total).
- h) Baghouse pressure differentials – EUGs 7, 9, 15 (12-hour rolling), EUGs 8, 10, 12, 16 (daily).
- i) Process weight rates and hours of operation for each furnace – EUG 6 (daily). Process weights can be estimated based on the expected yields from the carbonizers.
- j) Scrubber nozzle pressures - EUG 15 (1-hour rolling average).
- k) Acid gas scrubber liquor pH and liquid flow - EUG 15 (1-hour rolling average).
- l) Operation, maintenance, and inspection log for each control device – all EUGs.
- m) Records of the date and time of Reference Method (RM) No. 22 visual emission observations, stack or emission point observed, operational status of the emission unit, observed results and conclusions, and any RM No. 9 results - the points are identified as Sequence Numbers 2, 3, 6, 8, 9, 11, 12, 14, 15, and 16 on the 2009 annual emission inventory.
- n) Amount of fuel combusted – EUG 19 (daily, monthly and 12-month rolling total).
- o) The facility shall maintain records of all waste stream profiles, sufficient to demonstrate the presence of any chlorinated organic waste in each, along with records sufficient to demonstrate when each such stream was processed through the regeneration kiln and afterburner.
- p) Records of weekly external inspections of cyclones and of O&M, per SC #1, EUG 3 and EUG 6.

15. No later than 30 days after each anniversary date of the initial Part 70 operating permit (October 11, 2010), the permittee shall submit to Air Quality Division of DEQ, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit. [OAC 252:100-8-6 (c)(5)(A) & (D)]

16. This permit supersedes all previous Air Quality operating permits for this facility, which are now null and void.

**COMPLIANCE PLAN**

Applicant states that it can effectively address all SO<sub>2</sub> requirements through emissions controls or enhanced dispersion coupled with reduced allowable emission limits. Both options will require further study before a selection can be made. Also, adequate time will be needed to design and construct the selected project as well as to perform additional air quality analyses.

- a) Within one (1) year of the issue date of this Title V modification permit, Norit agrees to complete the evaluation and present plans to DEQ for the selected project. The submittal to DEQ will include any required air quality analysis. Also, a modification to the PSD application will be submitted to include the selected technology.
- b) Within three (3) years of the issue date of this Title V modification permit, Norit agrees to have the selected project completed.
- c) If the method involves performance testing, such testing shall be completed within six months after first operation of the method chosen.

**MAJOR SOURCE AIR QUALITY PERMIT  
STANDARD CONDITIONS  
(July 21, 2009)**

**SECTION I. DUTY TO COMPLY**

A. This is a permit to operate / construct this specific facility in accordance with the federal Clean Air Act (42 U.S.C. 7401, et al.) and under the authority of the Oklahoma Clean Air Act and the rules promulgated there under. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

B. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ). The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

C. The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Oklahoma Clean Air Act and shall be grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application. All terms and conditions are enforceable by the DEQ, by the Environmental Protection Agency (EPA), and by citizens under section 304 of the Federal Clean Air Act (excluding state-only requirements). This permit is valid for operations only at the specific location listed.

[40 C.F.R. §70.6(b), OAC 252:100-8-1.3 and OAC 252:100-8-6(a)(7)(A) and (b)(1)]

D. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations. [OAC 252:100-8-6(a)(7)(B)]

**SECTION II. REPORTING OF DEVIATIONS FROM PERMIT TERMS**

A. Any exceedance resulting from an emergency and/or posing an imminent and substantial danger to public health, safety, or the environment shall be reported in accordance with Section XIV (Emergencies). [OAC 252:100-8-6(a)(3)(C)(iii)(I) & (II)]

B. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements. [OAC 252:100-8-6(a)(3)(C)(iv)]

C. Every written report submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F.

[OAC 252:100-8-6(a)(3)(C)(iv)]

**SECTION III. MONITORING, TESTING, RECORDKEEPING & REPORTING**

A. The permittee shall keep records as specified in this permit. These records, including monitoring data and necessary support information, shall be retained on-site or at a nearby field

office for a period of at least five years from the date of the monitoring sample, measurement, report, or application, and shall be made available for inspection by regulatory personnel upon request. Support information includes all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Where appropriate, the permit may specify that records may be maintained in computerized form.

[OAC 252:100-8-6 (a)(3)(B)(ii), OAC 252:100-8-6(c)(1), and OAC 252:100-8-6(c)(2)(B)]

B. Records of required monitoring shall include:

- (1) the date, place and time of sampling or measurement;
- (2) the date or dates analyses were performed;
- (3) the company or entity which performed the analyses;
- (4) the analytical techniques or methods used;
- (5) the results of such analyses; and
- (6) the operating conditions existing at the time of sampling or measurement.

[OAC 252:100-8-6(a)(3)(B)(i)]

C. No later than 30 days after each six (6) month period, after the date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to AQD a report of the results of any required monitoring. All instances of deviations from permit requirements since the previous report shall be clearly identified in the report. Submission of these periodic reports will satisfy any reporting requirement of Paragraph E below that is duplicative of the periodic reports, if so noted on the submitted report.

[OAC 252:100-8-6(a)(3)(C)(i) and (ii)]

D. If any testing shows emissions in excess of limitations specified in this permit, the owner or operator shall comply with the provisions of Section II (Reporting Of Deviations From Permit Terms) of these standard conditions.

[OAC 252:100-8-6(a)(3)(C)(iii)]

E. In addition to any monitoring, recordkeeping or reporting requirement specified in this permit, monitoring and reporting may be required under the provisions of OAC 252:100-43, Testing, Monitoring, and Recordkeeping, or as required by any provision of the Federal Clean Air Act or Oklahoma Clean Air Act.

[OAC 252:100-43]

F. Any Annual Certification of Compliance, Semi Annual Monitoring and Deviation Report, Excess Emission Report, and Annual Emission Inventory submitted in accordance with this permit shall be certified by a responsible official. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete."

[OAC 252:100-8-5(f), OAC 252:100-8-6(a)(3)(C)(iv), OAC 252:100-8-6(c)(1), OAC 252:100-9-7(e), and OAC 252:100-5-2.1(f)]

G. Any owner or operator subject to the provisions of New Source Performance Standards ("NSPS") under 40 CFR Part 60 or National Emission Standards for Hazardous Air Pollutants ("NESHAPs") under 40 CFR Parts 61 and 63 shall maintain a file of all measurements and other information required by the applicable general provisions and subpart(s). These records shall be maintained in a permanent file suitable for inspection, shall be retained for a period of at least five years as required by Paragraph A of this Section, and shall include records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility,

any malfunction of the air pollution control equipment; and any periods during which a continuous monitoring system or monitoring device is inoperative.

[40 C.F.R. §§60.7 and 63.10, 40 CFR Parts 61, Subpart A, and OAC 252:100, Appendix Q]

H. The permittee of a facility that is operating subject to a schedule of compliance shall submit to the DEQ a progress report at least semi-annually. The progress reports shall contain dates for achieving the activities, milestones or compliance required in the schedule of compliance and the dates when such activities, milestones or compliance was achieved. The progress reports shall also contain an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted. [OAC 252:100-8-6(c)(4)]

I. All testing must be conducted under the direction of qualified personnel by methods approved by the Division Director. All tests shall be made and the results calculated in accordance with standard test procedures. The use of alternative test procedures must be approved by EPA. When a portable analyzer is used to measure emissions it shall be setup, calibrated, and operated in accordance with the manufacturer's instructions and in accordance with a protocol meeting the requirements of the "AQD Portable Analyzer Guidance" document or an equivalent method approved by Air Quality.

[OAC 252:100-8-6(a)(3)(A)(iv), and OAC 252:100-43]

J. The reporting of total particulate matter emissions as required in Part 7 of OAC 252:100-8 (Permits for Part 70 Sources), OAC 252:100-19 (Control of Emission of Particulate Matter), and OAC 252:100-5 (Emission Inventory), shall be conducted in accordance with applicable testing or calculation procedures, modified to include back-half condensables, for the concentration of particulate matter less than 10 microns in diameter (PM<sub>10</sub>). NSPS may allow reporting of only particulate matter emissions caught in the filter (obtained using Reference Method 5).

K. The permittee shall submit to the AQD a copy of all reports submitted to the EPA as required by 40 C.F.R. Part 60, 61, and 63, for all equipment constructed or operated under this permit subject to such standards. [OAC 252:100-8-6(c)(1) and OAC 252:100, Appendix Q]

#### SECTION IV. COMPLIANCE CERTIFICATIONS

A. No later than 30 days after each anniversary date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to the AQD, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit and of any other applicable requirements which have become effective since the issuance of this permit.

[OAC 252:100-8-6(c)(5)(A), and (D)]

B. The compliance certification shall describe the operating permit term or condition that is the basis of the certification; the current compliance status; whether compliance was continuous or intermittent; the methods used for determining compliance, currently and over the reporting period. The compliance certification shall also include such other facts as the permitting authority may require to determine the compliance status of the source.

[OAC 252:100-8-6(c)(5)(C)(i)-(v)]

C. The compliance certification shall contain a certification by a responsible official as to the results of the required monitoring. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed

after reasonable inquiry, the statements and information in the document are true, accurate, and complete.” [OAC 252:100-8-5(f) and OAC 252:100-8-6(c)(1)]

D. Any facility reporting noncompliance shall submit a schedule of compliance for emissions units or stationary sources that are not in compliance with all applicable requirements. This schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the emissions unit or stationary source is in noncompliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the emissions unit or stationary source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based, except that a compliance plan shall not be required for any noncompliance condition which is corrected within 24 hours of discovery.

[OAC 252:100-8-5(e)(8)(B) and OAC 252:100-8-6(c)(3)]

## **SECTION V. REQUIREMENTS THAT BECOME APPLICABLE DURING THE PERMIT TERM**

The permittee shall comply with any additional requirements that become effective during the permit term and that are applicable to the facility. Compliance with all new requirements shall be certified in the next annual certification. [OAC 252:100-8-6(c)(6)]

## **SECTION VI. PERMIT SHIELD**

A. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC 252:100-8) shall be deemed compliance with the applicable requirements identified and included in this permit. [OAC 252:100-8-6(d)(1)]

B. Those requirements that are applicable are listed in the Standard Conditions and the Specific Conditions of this permit. Those requirements that the applicant requested be determined as not applicable are summarized in the Specific Conditions of this permit. [OAC 252:100-8-6(d)(2)]

## **SECTION VII. ANNUAL EMISSIONS INVENTORY & FEE PAYMENT**

The permittee shall file with the AQD an annual emission inventory and shall pay annual fees based on emissions inventories. The methods used to calculate emissions for inventory purposes shall be based on the best available information accepted by AQD.

[OAC 252:100-5-2.1, OAC 252:100-5-2.2, and OAC 252:100-8-6(a)(8)]

## **SECTION VIII. TERM OF PERMIT**

A. Unless specified otherwise, the term of an operating permit shall be five years from the date of issuance. [OAC 252:100-8-6(a)(2)(A)]

B. A source's right to operate shall terminate upon the expiration of its permit unless a timely and complete renewal application has been submitted at least 180 days before the date of expiration. [OAC 252:100-8-7.1(d)(1)]

C. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-8-1.4(b)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-8-1.4(a)]

D. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-8-4(b)(5)]

## **SECTION IX. SEVERABILITY**

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby. [OAC 252:100-8-6 (a)(6)]

## **SECTION X. PROPERTY RIGHTS**

A. This permit does not convey any property rights of any sort, or any exclusive privilege. [OAC 252:100-8-6(a)(7)(D)]

B. This permit shall not be considered in any manner affecting the title of the premises upon which the equipment is located and does not release the permittee from any liability for damage to persons or property caused by or resulting from the maintenance or operation of the equipment for which the permit is issued. [OAC 252:100-8-6(c)(6)]

## **SECTION XI. DUTY TO PROVIDE INFORMATION**

A. The permittee shall furnish to the DEQ, upon receipt of a written request and within sixty (60) days of the request unless the DEQ specifies another time period, any information that the DEQ may request to determine whether cause exists for modifying, reopening, revoking, reissuing, terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permit. [OAC 252:100-8-6(a)(7)(E)]

B. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 27A O.S. § 2-5-105(18). Confidential information shall be clearly labeled as such and shall be separable from the main body of the document such as in an attachment. [OAC 252:100-8-6(a)(7)(E)]

C. Notification to the AQD of the sale or transfer of ownership of this facility is required and shall be made in writing within thirty (30) days after such sale or transfer. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112(G)]

## **SECTION XII. REOPENING, MODIFICATION & REVOCATION**

A. The permit may be modified, revoked, reopened and reissued, or terminated for cause. Except as provided for minor permit modifications, the filing of a request by the permittee for a

permit modification, revocation and reissuance, termination, notification of planned changes, or anticipated noncompliance does not stay any permit condition.

[OAC 252:100-8-6(a)(7)(C) and OAC 252:100-8-7.2(b)]

B. The DEQ will reopen and revise or revoke this permit prior to the expiration date in the following circumstances:

[OAC 252:100-8-7.3 and OAC 252:100-8-7.4(a)(2)]

- (1) Additional requirements under the Clean Air Act become applicable to a major source category three or more years prior to the expiration date of this permit. No such reopening is required if the effective date of the requirement is later than the expiration date of this permit.
- (2) The DEQ or the EPA determines that this permit contains a material mistake or that the permit must be revised or revoked to assure compliance with the applicable requirements.
- (3) The DEQ or the EPA determines that inaccurate information was used in establishing the emission standards, limitations, or other conditions of this permit. The DEQ may revoke and not reissue this permit if it determines that the permittee has submitted false or misleading information to the DEQ.
- (4) DEQ determines that the permit should be amended under the discretionary reopening provisions of OAC 252:100-8-7.3(b).

C. The permit may be reopened for cause by EPA, pursuant to the provisions of OAC 100-8-7.3(d).

[OAC 100-8-7.3(d)]

D. The permittee shall notify AQD before making changes other than those described in Section XVIII (Operational Flexibility), those qualifying for administrative permit amendments, or those defined as an Insignificant Activity (Section XVI) or Trivial Activity (Section XVII). The notification should include any changes which may alter the status of a "grandfathered source," as defined under AQD rules. Such changes may require a permit modification.

[OAC 252:100-8-7.2(b) and OAC 252:100-5-1.1]

E. Activities that will result in air emissions that exceed the trivial/insignificant levels and that are not specifically approved by this permit are prohibited.

[OAC 252:100-8-6(c)(6)]

### **SECTION XIII. INSPECTION & ENTRY**

A. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized regulatory officials to perform the following (subject to the permittee's right to seek confidential treatment pursuant to 27A O.S. Supp. 1998, § 2-5-105(18) for confidential information submitted to or obtained by the DEQ under this section):

- (1) enter upon the permittee's premises during reasonable/normal working hours where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
- (2) have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
- (3) inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

- (4) as authorized by the Oklahoma Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit.

[OAC 252:100-8-6(c)(2)]

#### **SECTION XIV. EMERGENCIES**

A. Any exceedance resulting from an emergency shall be reported to AQD promptly but no later than 4:30 p.m. on the next working day after the permittee first becomes aware of the exceedance. This notice shall contain a description of the emergency, the probable cause of the exceedance, any steps taken to mitigate emissions, and corrective actions taken.

[OAC 252:100-8-6 (a)(3)(C)(iii)(I) and (IV)]

B. Any exceedance that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to AQD as soon as is practicable; but under no circumstance shall notification be more than 24 hours after the exceedance.

[OAC 252:100-8-6(a)(3)(C)(iii)(II)]

C. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.

[OAC 252:100-8-2]

D. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that:

[OAC 252:100-8-6 (e)(2)]

- (1) an emergency occurred and the permittee can identify the cause or causes of the emergency;
- (2) the permitted facility was at the time being properly operated;
- (3) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit.

E. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof.

[OAC 252:100-8-6(e)(3)]

F. Every written report or document submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F.

[OAC 252:100-8-6(a)(3)(C)(iv)]

#### **SECTION XV. RISK MANAGEMENT PLAN**

The permittee, if subject to the provision of Section 112(r) of the Clean Air Act, shall develop and register with the appropriate agency a risk management plan by June 20, 1999, or the applicable effective date.

[OAC 252:100-8-6(a)(4)]

**SECTION XVI. INSIGNIFICANT ACTIVITIES**

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate individual emissions units that are either on the list in Appendix I to OAC Title 252, Chapter 100, or whose actual calendar year emissions do not exceed any of the limits below. Any activity to which a State or Federal applicable requirement applies is not insignificant even if it meets the criteria below or is included on the insignificant activities list.

- (1) 5 tons per year of any one criteria pollutant.
- (2) 2 tons per year for any one hazardous air pollutant (HAP) or 5 tons per year for an aggregate of two or more HAP's, or 20 percent of any threshold less than 10 tons per year for single HAP that the EPA may establish by rule.

[OAC 252:100-8-2 and OAC 252:100, Appendix I]

**SECTION XVII. TRIVIAL ACTIVITIES**

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate any individual or combination of air emissions units that are considered inconsequential and are on the list in Appendix J. Any activity to which a State or Federal applicable requirement applies is not trivial even if included on the trivial activities list.

[OAC 252:100-8-2 and OAC 252:100, Appendix J]

**SECTION XVIII. OPERATIONAL FLEXIBILITY**

A. A facility may implement any operating scenario allowed for in its Part 70 permit without the need for any permit revision or any notification to the DEQ (unless specified otherwise in the permit). When an operating scenario is changed, the permittee shall record in a log at the facility the scenario under which it is operating.

[OAC 252:100-8-6(a)(10) and (f)(1)]

B. The permittee may make changes within the facility that:

- (1) result in no net emissions increases,
- (2) are not modifications under any provision of Title I of the federal Clean Air Act, and
- (3) do not cause any hourly or annual permitted emission rate of any existing emissions unit to be exceeded;

provided that the facility provides the EPA and the DEQ with written notification as required below in advance of the proposed changes, which shall be a minimum of seven (7) days, or twenty four (24) hours for emergencies as defined in OAC 252:100-8-6 (e). The permittee, the DEQ, and the EPA shall attach each such notice to their copy of the permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield provided by this permit does not apply to any change made pursuant to this paragraph.

[OAC 252:100-8-6(f)(2)]

**SECTION XIX. OTHER APPLICABLE & STATE-ONLY REQUIREMENTS**

A. The following applicable requirements and state-only requirements apply to the facility unless elsewhere covered by a more restrictive requirement:

- (1) Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning Subchapter.  
[OAC 252:100-13]
- (2) No particulate emissions from any fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lb/MMBTU.  
[OAC 252:100-19]
- (3) For all emissions units not subject to an opacity limit promulgated under 40 C.F.R., Part 60, NSPS, no discharge of greater than 20% opacity is allowed except for:  
[OAC 252:100-25]
  - (a) Short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity;
  - (b) Smoke resulting from fires covered by the exceptions outlined in OAC 252:100-13-7;
  - (c) An emission, where the presence of uncombined water is the only reason for failure to meet the requirements of OAC 252:100-25-3(a); or
  - (d) Smoke generated due to a malfunction in a facility, when the source of the fuel producing the smoke is not under the direct and immediate control of the facility and the immediate constriction of the fuel flow at the facility would produce a hazard to life and/or property.
- (4) No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards.  
[OAC 252:100-29]
- (5) No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lb/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide.  
[OAC 252:100-31]
- (6) Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with a vapor-recovery system.  
[OAC 252:100-37-15(b)]
- (7) All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs.  
[OAC 252:100-37-36]

**SECTION XX. STRATOSPHERIC OZONE PROTECTION**

A. The permittee shall comply with the following standards for production and consumption of ozone-depleting substances:  
[40 CFR 82, Subpart A]

- (1) Persons producing, importing, or placing an order for production or importation of certain class I and class II substances, HCFC-22, or HCFC-141b shall be subject to the requirements of §82.4;
- (2) Producers, importers, exporters, purchasers, and persons who transform or destroy certain class I and class II substances, HCFC-22, or HCFC-141b are subject to the recordkeeping requirements at §82.13; and
- (3) Class I substances (listed at Appendix A to Subpart A) include certain CFCs, Halons, HBFCs, carbon tetrachloride, trichloroethane (methyl chloroform), and bromomethane (Methyl Bromide). Class II substances (listed at Appendix B to Subpart A) include HCFCs.

B. If the permittee performs a service on motor (fleet) vehicles when this service involves an ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all applicable requirements. Note: The term “motor vehicle” as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term “MVAC” as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant. [40 CFR 82, Subpart B]

C. The permittee shall comply with the following standards for recycling and emissions reduction except as provided for MVACs in Subpart B: [40 CFR 82, Subpart F]

- (1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to § 82.156;
- (2) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to § 82.158;
- (3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161;
- (4) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record-keeping requirements pursuant to § 82.166;
- (5) Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to § 82.158; and
- (6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to § 82.166.

## SECTION XXI. TITLE V APPROVAL LANGUAGE

A. DEQ wishes to reduce the time and work associated with permit review and, wherever it is not inconsistent with Federal requirements, to provide for incorporation of requirements established through construction permitting into the Source’s Title V permit without causing redundant review. Requirements from construction permits may be incorporated into the Title V permit through the administrative amendment process set forth in OAC 252:100-8-7.2(a) only if the following procedures are followed:

- (1) The construction permit goes out for a 30-day public notice and comment using the procedures set forth in 40 C.F.R. § 70.7(h)(1). This public notice shall include notice to the public that this permit is subject to EPA review, EPA objection, and petition to EPA, as provided by 40 C.F.R. § 70.8; that the requirements of the construction permit will be incorporated into the Title V permit through the administrative amendment

process; that the public will not receive another opportunity to provide comments when the requirements are incorporated into the Title V permit; and that EPA review, EPA objection, and petitions to EPA will not be available to the public when requirements from the construction permit are incorporated into the Title V permit.

- (2) A copy of the construction permit application is sent to EPA, as provided by 40 CFR § 70.8(a)(1).
- (3) A copy of the draft construction permit is sent to any affected State, as provided by 40 C.F.R. § 70.8(b).
- (4) A copy of the proposed construction permit is sent to EPA for a 45-day review period as provided by 40 C.F.R. § 70.8(a) and (c).
- (5) The DEQ complies with 40 C.F.R. § 70.8(c) upon the written receipt within the 45-day comment period of any EPA objection to the construction permit. The DEQ shall not issue the permit until EPA's objections are resolved to the satisfaction of EPA.
- (6) The DEQ complies with 40 C.F.R. § 70.8(d).
- (7) A copy of the final construction permit is sent to EPA as provided by 40 CFR § 70.8(a).
- (8) The DEQ shall not issue the proposed construction permit until any affected State and EPA have had an opportunity to review the proposed permit, as provided by these permit conditions.
- (9) Any requirements of the construction permit may be reopened for cause after incorporation into the Title V permit by the administrative amendment process, by DEQ as provided in OAC 252:100-8-7.3(a), (b), and (c), and by EPA as provided in 40 C.F.R. § 70.7(f) and (g).
- (10) The DEQ shall not issue the administrative permit amendment if performance tests fail to demonstrate that the source is operating in substantial compliance with all permit requirements.

B. To the extent that these conditions are not followed, the Title V permit must go through the Title V review process.

## **SECTION XXII. CREDIBLE EVIDENCE**

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any provision of the Oklahoma implementation plan, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

[OAC 252:100-43-6]

Chris Soap, Plant Manager  
NORIT Americas, Inc.  
1432 6<sup>th</sup> Street, Mid-America Industrial Park  
Pryor, OK 74361-4434

SUBJECT: Permit Number: 98-171-TV (M-5)  
Facility: Pryor Activated Carbon Plant  
Location: Same

Dear Mr. Soap:

Air Quality Division has completed the initial review of your permit application referenced above. This application has been determined to be a **Tier II**. In accordance with 27A O.S. § 2-14-302 and OAC 252:4-7-13(c), the enclosed draft permit is now ready for public review. The requirements for public review include the following steps that you must accomplish.

- 1) Publish at least one legal notice (one day) in at least one newspaper of general circulation within the county where the facility is located. (Instructions enclosed)
- 2) Provide for public review (for a period of 30 days following the date of the newspaper announcement) a copy of this draft permit and a copy of the application at a convenient location **within the county** of the facility.
- 3) Send AQD a written affidavit of publication for the notice from Item #1 above together with any additional comments or requested changes which you may have for the permit application within 20 days of publication.
- 4) At the end of the public review period, send AQD a written notice of any public comments that you may have received from the public.

The permit review time is hereby tolled pending the receipt of the affidavit of publication. Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact the permit writer at (918) 293-1600.

Sincerely,

Phillip Fielder  
Air Quality Division

Chris Soap, Plant Manager  
NORIT Americas, Inc.  
1432 6<sup>th</sup> Street, Mid-America Industrial Park  
Pryor, OK 74361-4434

SUBJECT: Permit Number: 98-171-TV (M-5)  
Facility: Pryor Activated Carbon Plant  
Location: Same

Dear Mr. Soap:

Enclosed is the permit authorizing operation of the referenced facility. Please note that this permit is issued subject to certain standard and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed on approved AQD forms and submitted (hardcopy or electronically) by April 1st of every year. Any questions concerning the form or submittal process should be referred to the Emissions Inventory Staff at 405-702-4100.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me at (918) 293-1600. Air Quality personnel are located in the Regional Office at Tulsa, 3105 E. Skelly Drive, Suite 200, Tulsa, OK, 74105.

Sincerely,

Phillip Fielder  
Air Quality Division



# PART 70 PERMIT

AIR QUALITY DIVISION  
STATE OF OKLAHOMA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
707 N. ROBINSON, SUITE 4100  
P.O. BOX 1677  
OKLAHOMA CITY, OKLAHOMA 73101-1677

Permit No. 98-171-TV (M-5)

NORIT Americas, Inc.,

having complied with the requirements of the law, is hereby granted permission to operate  
all the sources within their Pryor Activated Carbon Plant in the Mid-America Industrial  
Park, Mayes County, Oklahoma,

subject to standard conditions dated July 21, 2009, and specific conditions, both attached.

This permit shall expire October 11, 2015, except as authorized under Section VIII of the Standard Conditions.

\_\_\_\_\_  
Division Director,  
Air Quality Division

\_\_\_\_\_  
Date